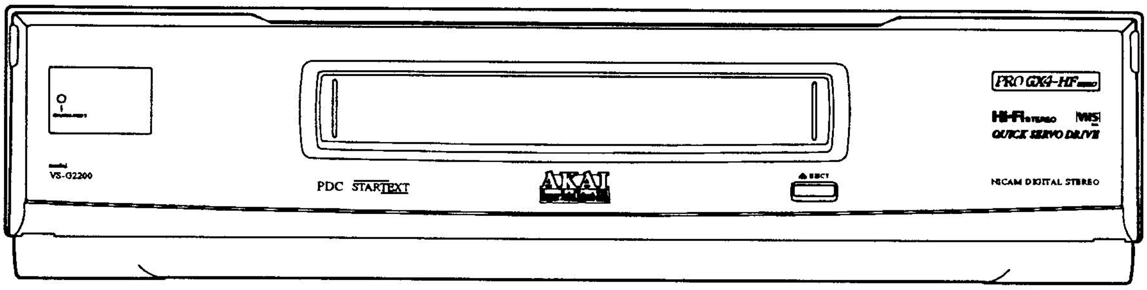
AKAI SERVICE MANUAL


VS-G2200
PRO GX4-HF
Hi-Fi STEREO
VHS
QUICK SERVO DRIVE
PDC STARTEXT
AKAI
EJECT
NICAM DIGITAL STEREO

MODEL VS-G2200EK-VN

HQ HIGH QUALITY **VHS** PAL **Hi·Fi**

SHOWVIEW

G-CODE

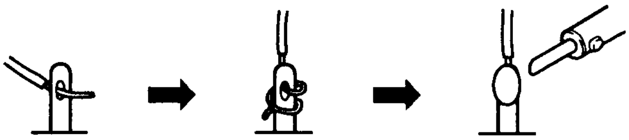
VIDEO CASSETTE RECORDER

MODEL VS-G2100 EA-D/EO-D/ EOH-DN
MODEL VS-G2160 EOH-VD
MODEL VS-G2200 EK-VN/EOG-VD

★ SAFETY INSTRUCTIONS

PRECAUTIONS DURING SERVICING

1. Parts identified by the ⚠ (✱) symbol are critical for safety. Replace them only with the parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation. These must also be replaced only with the specified replacements.
   Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts.
   Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers (insulating barriers)
   4) Insulation sheets for transistors
   5) Plastic screws for fixing micro switches
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap the ends of the wires securely around the terminals before soldering.



6. Make sure that wires do not contact heat producing parts (heat sinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Make sure that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

SAFETY CHECK AFTER SERVICING

After servicing, make measurements of leakage-current or resistance in order to determine that exposed parts are acceptably insulated from the supply circuit.
The leakage-current measurement should be done between accessible metal parts (such as chassis, ground terminal, microphone jacks, signal input/output connectors, etc.) and the earth ground through a resistor of 1500 ohms paralleled with a 0.15 µF capacitor, under the unit's normal working conditions.
The leakage-current should be less than 0.5 mA rms AC.
The resistance measurement should be done between accessible exposed metal parts and power cord plug prongs with the power switch (if included) "ON". The resistance should be more than 2.2 M Ohms.

MAKE YOUR CONTRIBUTION TO PROTECT THE ENVIRONMENT

Used batteries with the ISO symbol for recycling as well as small accumulators (rechargeable batteries), mini-batteries (cells) and starter batteries should not be thrown into the garbage can.
Please leave them at an appropriate depot.

★ SPECIFICATIONS

Format	
EA-D,EK-VN	VHS standard
except EA-D,EK-VN	VHS standard (PAL, MESECAM)
Video recording system	Rotary, slant azimuth two-head helical scan system
Rotary heads	4 video heads, 2 audio heads & 1flying erase head
RF input	
EA-D	System B, G VHS ch 0-5, 5A, 6-11 UHF ch 21-69
EK-VN	System I UHF ch 21 - 69 Cable ch S1' -S3', S1 - S20
EO-D, EOG-VD	System B, G (PAL, SECAM) VHF ch 2 - 4, 5 - 12, UHF ch 21 - 69 Cable ch S1' -S3', S1 - S20
EOH-DN/VD	System B, G (PAL, SECAM) VHF ch 2 - 4, 5 - 12, UHF ch 21 - 69 Cable ch S1' - S3', S1 - S41
RF output	
EA-D	System B type modulation VHF ch 0, 1 switchable (preset ch 1)
EK-VN	System I type modulation UHF ch 30 - 39 adjustable (preset ch 36)
except EA-D,EK-VN	System G type modulation UHF ch 30-39 adjustable (preset ch 36)
Stereo system	
EK-VN	NICAM-I (U.K. NICAM)
EA-D,EO-D, EOG-VD,EOH-VD	German sound multiplex (A2)
EOH-DN	NICAM-B/G and German sound multiplex (A2)
Recording (line input)	
EA-D,EK-VN	PAL
except EA-D,EK-VN	PAL,SECAM (recorded as MESECAM)
Playback (line output)	
EA-D,EK-VN	PAL, NTSC 4.43 (NTSC Tape) Simulated PAL (NTSC Tape)
EO-D,EOH-DN/VD	PAL,SECAM (MESECAM Tape)
EOG-VD	PAL, SECAM (MESECAM Tape) NTSC 4.43 (NTSC Tape) Simulated PAL (NTSC Tape)
Video	
Line input level	0.5 - 2.0 Vp-p/75 ohms, unbalanced
Line output level	1.0 Vp-p/75 ohms, unbalanced
S/N ratio	More than 45 dB
Horizontal resolution	More than 250 lines
Audio	(VHS Hi-Fi : 2 ch, Linear : 1 ch)
Line input level	–6 dBs/50 k ohms, unbalanced
Line output level	–6 dBs/1 k ohms, unbalanced
Dynamic range	More than 90 dB (VHS Hi-Fi)
Frequency response	20 - 20,000 Hz (VHS Hi-Fi)
Wow & Flutter	Less than 0.005 % WRMS (VHS Hi-Fi)

Recording/playback time	
SP mode	240 min. with E-240 cassette
LP mode	480 min. with E-240 cassette
(EA-D,EK-VN,EOG-VD only)	
CCIR SP mode	240 min. with E-240 cassette
LP mode	480 min. with E-240 cassette
NTSC (Playback only)	
SP mode	160 min. with T-160 cassette
EP mode	480 min. with T-160 cassette
Tape speed	
SP mode	23.39 mm/sec
LP mode	11.695 mm/sec
(EA-D,EK-VN,EOG-VD only)	
CCIR SP mode	23.39 mm/sec.
LP mode	11.695 mm/sec.
NTSC SP mode	33.35 mm/sec
EP mode	11.12 mm/sec
Quick finder	
SP mode	Approx. 7 times normal speed
LP mode	Approx. 7 times normal speed
(EA-D,EK-VN,EOG-VD only)	
CCIR SP mode	Approx. 7 times normal speed
LP mode	Approx. 7 times normal speed
NTSC SP mode	Approx. 5 times normal speed
EP mode	Approx. 5 times normal speed
FF, REW time	Approx. 2.0 min. with E-180 cassette
Timer	
Program	8 programs/1 year and OTR
Clock reference	Quartz crystal
Display	TV screen & FLD (Tape counter, Timer, etc.)
Power requirements	
EA-D	240 V AC, 50 Hz
EK-VN	230 - 240 V AC, 50 Hz
except EA-D,EK-VN	220 VAC, 50Hz
Power consumption	
EA-D	24 W
EK-VN	26 W
EO-D	25 W
EOH-DN/VD	27 W
EOG-VD	29 W
Operating temperature	5°C - 40°C
Dimensions	425 (W) x 104 (H) x 289 (D) mm
Weight	5.0 kg

Standard accessories

AC cord	1
Antenna cable	1
Remote control unit	1
Batteries for remote control	3
Operator's manual	1

0 dBs = 0.775 V

∗ For improvement purposes, specifications and design are subject to change without notice.

∗ SHOWVIEW IS A TRADEMARK APPLIED FOR BY GEMSTAR DEVELOPMENT CORP. SHOWVIEW SYSTEM IS MANUFACTURED UNDER LICENCE FROM GEMSTAR DEVELOPMENT CORPORATION.

∗ G-CODE IS A TRADEMARK APPLIED FOR BY GEMSTAR DEVELOPMENT CORP.
G-CODE SYSTEM IS MANUFACTURED UNDER LICENCE FROM GEMSTAR DEVELOPMENT CORPORATION.

★ INFORMATION

SYMBOLS FOR PRIMARY DESTINATION

Unit destinations are indicated with letters as shown below.

Symbol	Power Classification	Primary destination	TV System	
			Color	Broadcast
EA	S	Australia	PAL	B, G
ED	E	China	PAL	D
EDG	E	East Europe	PAL	D, K
EDI	E	China, Hong Kong	PAL	D, K, I
EG	E	Spain, Northern Europe, Other	PAL	B, G
	Y7	Saudi Arabia		
EK	B	U.K.	PAL	I
	Y1	Hong kong		
EM	E	Middle East	PAL	B, G
	Y7	Saudi Arabia		
EO	E	Holland, Switzerland, Northern Europe	PAL	B, G
	V	Italy		
EOH	E	Holland, Belgium	PAL	B, G
	V	Italy		
EOG	V	Germany	PAL	B, G
ES	E	South Africa, Ireland, Hong kong	PAL	I
EV	E	South-East Asia	PAL	B, G
	U	Middle East, South-East Asia		
	Y1	New Zealand		
	Y7	Saudi Arabia		
EZ	S	New Zealand	PAL	B, G
EGN	E	Middle East	PAL, NTSC	B, G
	Y7	Saudi Arabia		
S	E	France	SECAM	L
SK	E	Latin America, Oceania, SECAM-OIRT	SECAM	K, K1
SEG	E	France, Switzerland	SECAM, PAL	L, B, G
U	A	U.S.A.	NTSC	M
	C	Canada		
UM	U	Latin America	NTSC	M
J	J	Japan	NTSC	M

MULTI FUNCTION MENU MODE

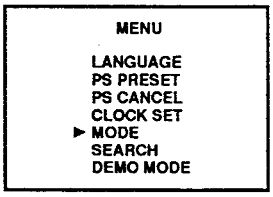
This is an on-screen display of the various modes you can programme via the TV screen.

LANGUAGE :To select a language for the on-screen displays.
PS PRESET :To preset TV stations.
PS CANCEL :To cancel preset TV stations.
CLOCK SET :To set the clock.
MODE :To select the SPEED (tape speed), BSP (blank skip play), OSD (on screen display), AV MUTE, SYST.(colour system), TV/VCR, DIMMER (FLD brightness) and AUTO OFF modes.
＊NOTE ;SYST. selection is not available on some models.

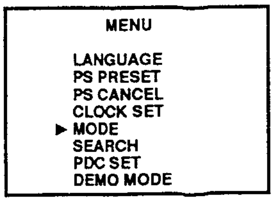
SEARCH :To select the BLANK SEARCH and INTRO SCAN modes.
PDC SET :To set the PDC mode on or off.
VPS SET :To set the VPS mode on or off.
VPT SET :To set the VPT function.
＊NOTE ;PDC SET , VPS SET or VPT SET functions are only available on some models.
DEMO MODE:To start the demonstration mode.

If necessary, refer to the respective sections in the operator's manual for detailed information.

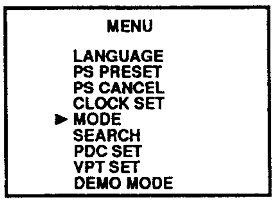
1. Press the "MENU" button on the remote control unit. The menu list screen will be displayed on the TV screen.


MENU
LANGUAGE
PS PRESET
PS CANCEL
CLOCK SET
► MODE
SEARCH
DEMO MODE

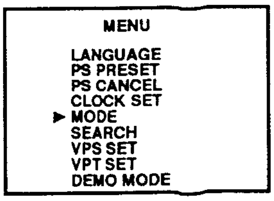
EA-D, EO-D, EOH-DN (E)


MENU
LANGUAGE
PS PRESET
PS CANCEL
CLOCK SET
► MODE
SEARCH
PDC SET
DEMO MODE

EOH-DN (Y1)


MENU
LANGUAGE
PS PRESET
PS CANCEL
CLOCK SET
► MODE
SEARCH
PDC SET
VPT SET
DEMO MODE

EK-VN, EOH-VD


MENU
LANGUAGE
PS PRESET
PS CANCEL
CLOCK SET
► MODE
SEARCH
VPS SET
VPT SET
DEMO MODE

EOG-VD

2. Select the desired menu by setting the arrow indicator to the appropriate position with the cursor "∧" or "∨" button.
   The arrow indicator moves upwards each time when the "∧" cursor button is pressed. Pressing the "∨" cursor button will move the arrow indicator downwards.
3. Press the "OK" button.
   The selected menu screen will be displayed on the TV screen.
4. Select the desired mode (or function) by setting the arrow indicator to the appropriate position with the cursor "∨" or "∧" button. The number of the modes (or functions) depends on the sort of the menu.
5. Set the each mode (or function) by pressing the "∨" or "∧" cursor button and ">" or "<" cursor button.
6. Press the "OK" button.
   The selected menu screen will be disappeared few seconds after the "OK" button is pressed. This means the setting has been completed correctly.

MANUAL TRACKING/PICTURE/STABILITY ADJUSTMENT

Using the remote control, the VCR can be adjusted for tracking and picture sharpness anytime during the playback mode.

- Manual tracking control
  Press the "<" or ">" cursor button repeatedly until the picture is clear. During manual tracking adjustment, the tracking position is shown on the TV screen, and disappears automatically after adjustment has been completed. Use this function when performing the A/C HEAD phase adjustment.
- Picture sharpness control
  Press the "∧" button repeatedly to sharpen the picture or press the "∨" button to soften the picture.
- Stability adjustment

1) To correct picture shake during the slow motion or still mode:
   Press the "∧" or "∨" cursor button repeatedly until the picture shake is corrected.
2) To correct tracking during the still mode:
   Press the "<" or ">" cursor button repeatedly until the picture is clear.

ERROR ANNOUNCEMENT

When a malfunction occurs, the following error indicators appear on the FL display to indicate the problem when the power is turned off.

Err 1 = AL power supply has short circuited.
Err 2 = The loading motor has been stopped irregularly. (When the mechanism position detect switch is not able to read the specified code, that is to say not able to reach to the specified position within the specified time.)
Err 3 = The drum motor has been stopped. (When the drum motor does not rotate due to condensation, etc.)
Err 5 = The capstan motor has been stopped. (When the capstan motor does not rotate.)

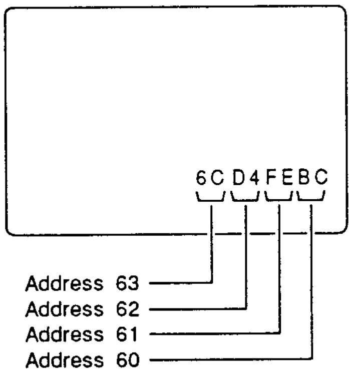
PRESETS IN THE TEST MODE

1) Engaging the "TEST MODE"

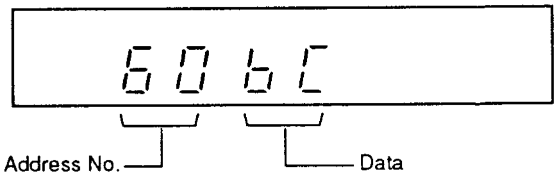
To set the VCR to the TEST MODE, press the "reset" button on the front panel first then plug in the AC power cord while pressing and holding both the "POWER" and "STOP/EJECT" buttons on the front at the same time. Next, release your fingers from both the buttons a few seconds later and press the "POWER" button.

2) Version code preset

1. Engage the "test mode". The version (model) code will be displayed on the lower right part of the screen in 8 digit form.



2. While pressing both the "FF" and "RWD" buttons, press the "RESET" button. The address and its data will be shown in the FL display. (Keep pressing the "FF" and "RWD" buttons until version code apppears.)



3. Select the address "60" by pressing the "FF" or "RWD" button.
4. Choose the data in the address 60 column that corresponds to the model number you are working on from the following list. Set the chosen data value by pressing the "STOP" or "PLAY" button.

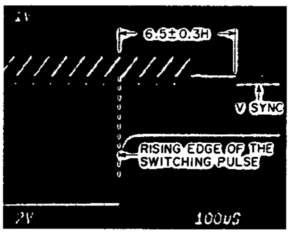
MODEL	MODEL CODE	ADDRESS			
		60 (h)	61 (h)	62 (h)	63 (h)
VS-G2100EA-D	E4C24EBC	bc	4–	c2	–4
VS-G2100EO-D	ECD07E7C	7c	7–	d0	–c
VS-G2100EOH-DN (E)	ECD97E7C	7c	7–	d9	–c
VS-G2100EOH-DN (Y1)	ECD9FE7C	7c	F–	d9	–c
VS-G2160EOH-VD (Y1)	ECD9FE7C	7c	F–	d9	–c
VS-G2200EK-VN	6CD4FEBC	bc	F–	d4	6c
VS-G2200EOG-VD	EFD85EFC	Fc	S–	d8	–F

5. Memorize the data into the EEP ROM IC by pressing the "REC" button.
6. The address "61" and its data will be shown in the FL display. Repeat the presetting (steps 4 to 5) for addresses "61", "62" and "63" in the same manner as address "60".
7. Press the "RESET" button to disengage the version (model) code preset mode.

NOTE :This version code preset is absolutely necessary when the IC402 (EEP-ROM) on the MAIN PCB is replaced.

3) Video switching point preset

1. Engage the "test mode".
2. Connect CH-1 of an oscilloscope to VIDEO OUT and CH-2 to the TP2 (V-SWP) on the PRE AMP & Hi-Fi PCB for triggering.
3. Play back the reference tape TF-530RFS (AT-751775) and press the "REC" button during playback.
4. Confirm that the switching point is positioned 6.5 ± 0.3 H before the left edge of the V-sync as shown.



NOTE:

This switching point preset is absolutely necessary when conditions are as follows.

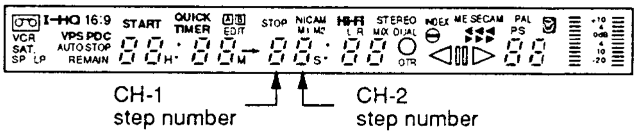
- When the video head drum (upper drum) is replaced.
- When the DRUM MOTOR PCB or DRUM MOTOR's ROTARY MAGNET (ROTARY PLATE) is replaced.
- When the SERVO/SYSCON MI-COM or EEP ROM IC (IC402) on the MAIN PCB is replaced.

4) Y REC current preset

Although the optimum Y REC current is determined each time when the I-HQ tape tuning system is operated, however centre value of the variable range should be memorized in the micro computer.

If the IC1 (AN3386NK) in the PRE AMP & Hi-Fi PCB or whole PRE AMP & Hi-Fi PCB is replaced, following preset must be performed for the proper performance.

1. Engage the test mode.
2. Set the tape speed to the "LP" mode.
3. Previously memorized step value will be appeared in the FL display in the position shown below. The CH-1's step value is displayed in the left side and the CH-2's step value is right side.

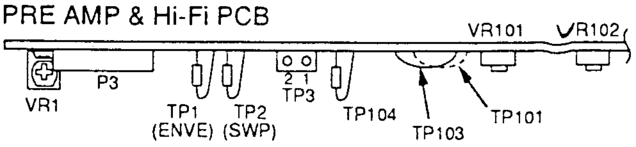


4. If the left one is not the same as right one, choose the CH-1's or CH-2's whichever the step value is larger.
5. Select the Y REC current level from the following list that is corresponded to the step value which you have choosen in step 3.

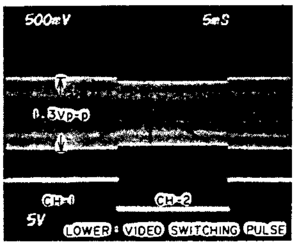
Step No. (value)	V REC VOLUME DC level	Y REC current level
0	4.5 V	0.68 Vp-p
1	4.0 V	0.82 Vp-p
2	3.5 V	1.00 Vp-p
3	3.0 V	1.15 Vp-p
4	2.5 V	1.30 Vp-p
5	2.0 V	1.45 Vp-p
6	1.5 V	1.60 Vp-p
7	1.0 V	1.75 Vp-p

6. Connect the CH-1 of an oscilloscope to the TP3 ① pin (REC CURRENT CHECK) on the PRE AMP & Hi-Fi PCB and the CH-2 to the TP2 (SWP) for triggering.

PRE AMP & Hi-Fi PCB



7. Insert a blank tape and start a recording. Adjust the VR1 on the PRE AMP & Hi-Fi PCB so that the Y REC CURRENT is the same value as choosen from the list. The switching pulse's "H" level period corresponds to CH-1 and "L" period corresponds to CH-2.



Example of CH-1 side, step No.4

8. Next, insert the I-HQ test tape "TF-556AT" (AT-751822J) and then perform tape tuning in order to memorize the data by pressing both the "I-HQ" and "REC" buttons simultenuously.
9. After this preset has been completed, proceed to next 5) "Memorization of the reference RF envelope detect voltage". Steps 4 to 6 should be performed before terminate the test mode.

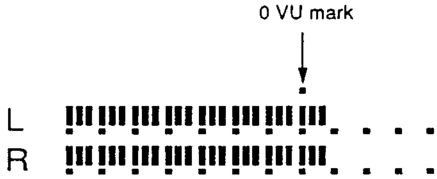
5) Memorization of the reference RF envelope detect voltage (I-HQ)

For the purpose of the correct operation of the I-HQ tape tuning system, memorization of the reference RF envelope detect voltage is absolutely necessary. When the VIDEO HEAD DRUM, PRE AMP PCB or EEP ROM IC in the MAIN PCB is replaced for any reason, memorize the reference RF envelope detect voltage according to the following procedure.

1. Engage the test mode.
2. Set the tape speed to "LP mode".
3. Insert the I-HQ test tape "TF-556AT" (AT-751822J) and then perform tape tuning by pressing both the "I-HQ" and "REC" buttons simultenuously.
4. Make a recording on the I-HQ test tape for more than 1 minute and then rewind it to the point where the recording was started.
5. Play back the tape. Reference RF envelope detect voltage data in the memory is displayed in 2 digits in the hours display part of the FL display and the present envelope detect voltage data is displayed in 2 digits in the minutes display part (the data is displayed in hexadecimal numbers).
6. After the auto tracking has been activated, press the "CANCEL" button on the remote control unit. So present RF envelope detect voltage data will be transferred to the hours part's 2 digits and memorized in the EEP ROM IC.
7. Next, set the tape speed to "SP mode" and repeat the steps 3 to 5.
8. Terminate the test mode.

6) Audio level meter sensitivity preset

1. Engage the test mode and press the "POWER" button.
2. Input a 1 kHz, –6.0 dBs sinewave signal to the AUDIO INPUT terminal and connect an AC milli-voltmeter to the AUDIO OUT terminal.
3. Set both the right and left channel REC LEVEL volumes on the FRONT PANEL at the centre position. Next, adjust the output level of the AUDIO SIGNAL GENERATOR so that L-CH output level is –6.0 dBs. Adjust the R-CH REC LEVEL volume so that R-CH output level is –6.0 dBs.
4. Press the display control button on the remote control unit until the audio level meter appears on the TV screen.
5. Press both the "►►" and "◄◄" buttons on the front panel at the same time. A –6.0 dBs level will be referenced by the micro computer. The micro computer determines bar meter sensitivity according to this level. Change the AUDIO SIGNAL GENERATOR output slightly and confirm that both the bar meter's 0 VU position on the TV screen and bar meter's 0 dB position on the FL display turn on when the L-CH output is reached –6.0 dBs.



6. If the result is not satisfactory, repeat steps 3 to 5.

7) Other facilities in the test mode

1. **Tracking position display**

   In the "SP play" mode, tracking position data can be displayed on the FL display. Data is displayed in 64 steps in hexadecimal numbers from "00" to "3F" in the seconds display part on the FL display. Pressing the "TV/VCR" button on the remote control unit during playback directly sets the tracking to the maximum "3F" position and pressing the "COUNTER RESET" button sets it to the minimum "00" position.

   Pressing the "PLAY" button during playback sets tracking to the center position "1F" automatically. If "1F" does not appear even when the "PLAY" button is pressed, keep pressing the "<" or ">" cursor button on the remote control unit until "1F" is indicated and then press the "OK" button to memorize the position.
2. **TIMER function confirmation**

   During the "test mode", the clock's minute part is advanced by a second when the power is turned off. This means that the "timer" function can be confirmed in a short time.
3. **Suspension of the tape protection system**

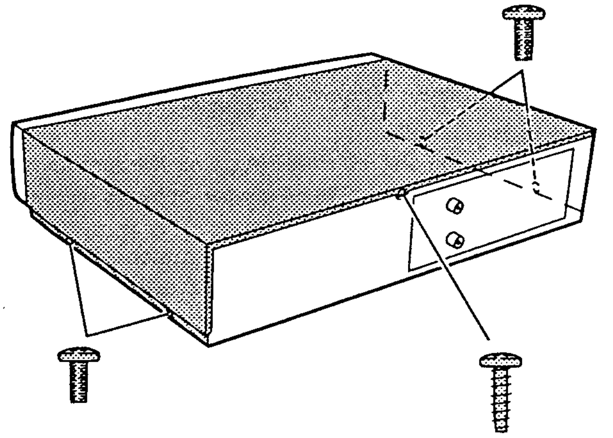
   When the VCR is not in the "test mode", the "REC PAUSE" mode will be released after 30 minutes in order to protect the tape. The "STILL" mode will also be released after 5 minutes. During the "test mode", however this tape protection system will not operate.

※ Video head rotation will stop 5 min. after the "REC PAUSE" mode has been engaged even during the test mode.

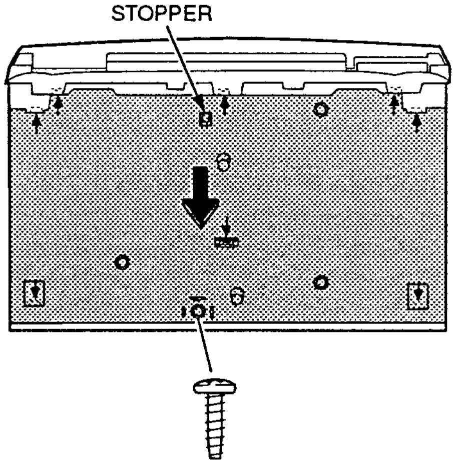
I. DISASSEMBLY

In case of trouble, etc., necessitating dismantling, please dismantle in the order shown in the illustrations. Reassemble in the reverse order.

1. Removal of UPPER COVER

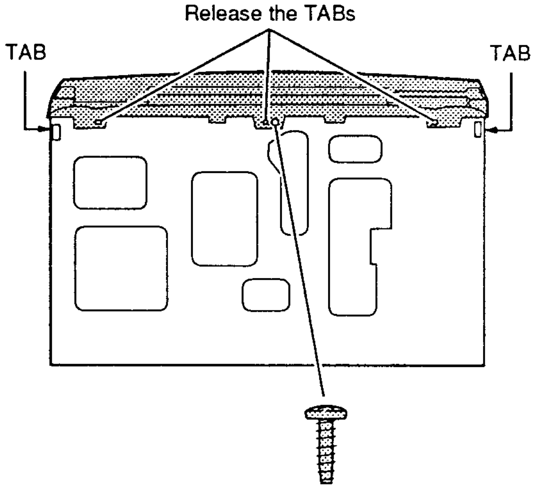


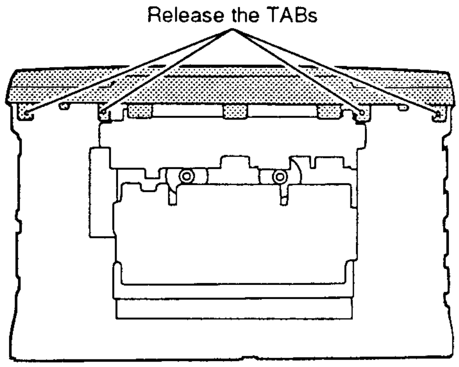
2. Removal of BOTTOM COVER



While pressing the stopper downward, slide the Bottom cover in the direction of the arrow for removal.
When replacing the Bottom cover, make sure it is secured with the tabs.

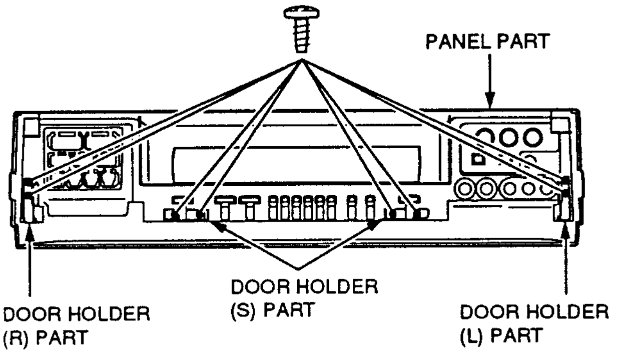
3. Removal of FRONT PANEL
Disconnect the P51 connector on the OPERATION (A) PCB.





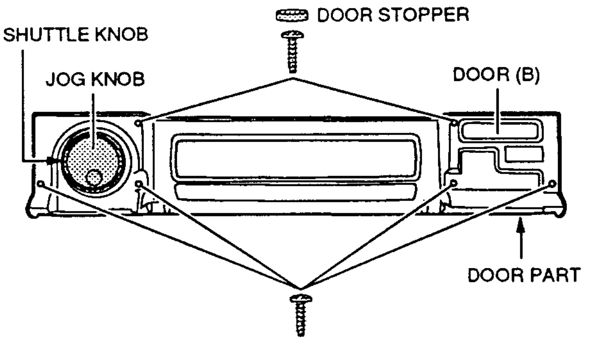
Disassembly of the FRONT PANEL

1. Removal of the DOOR BLOCK


PANEL PART
DOOR HOLDER (S) PART
DOOR HOLDER (R) PART
DOOR HOLDER (L) PART

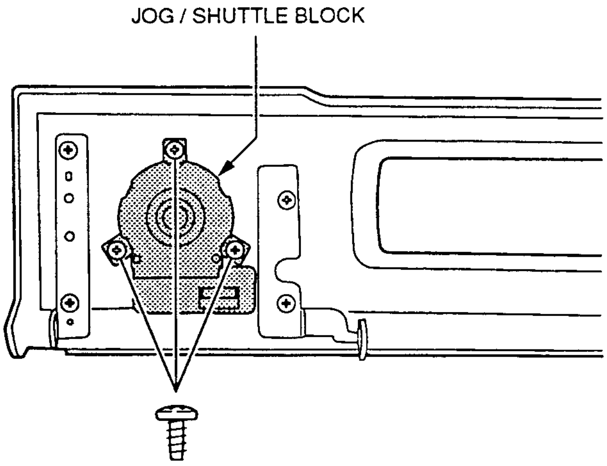
Remove the DOOR HOLDER (L), DOOR HOLDER (R) and two DOOR HOLDER (S) PARTs then detach the DOOR BLOCK from the PANEL PART.

2. Disassembly of the DOOR BLOCK


DOOR STOPPER
SHUTTLE KNOB
JOG KNOB
DOOR (B)
DOOR PART

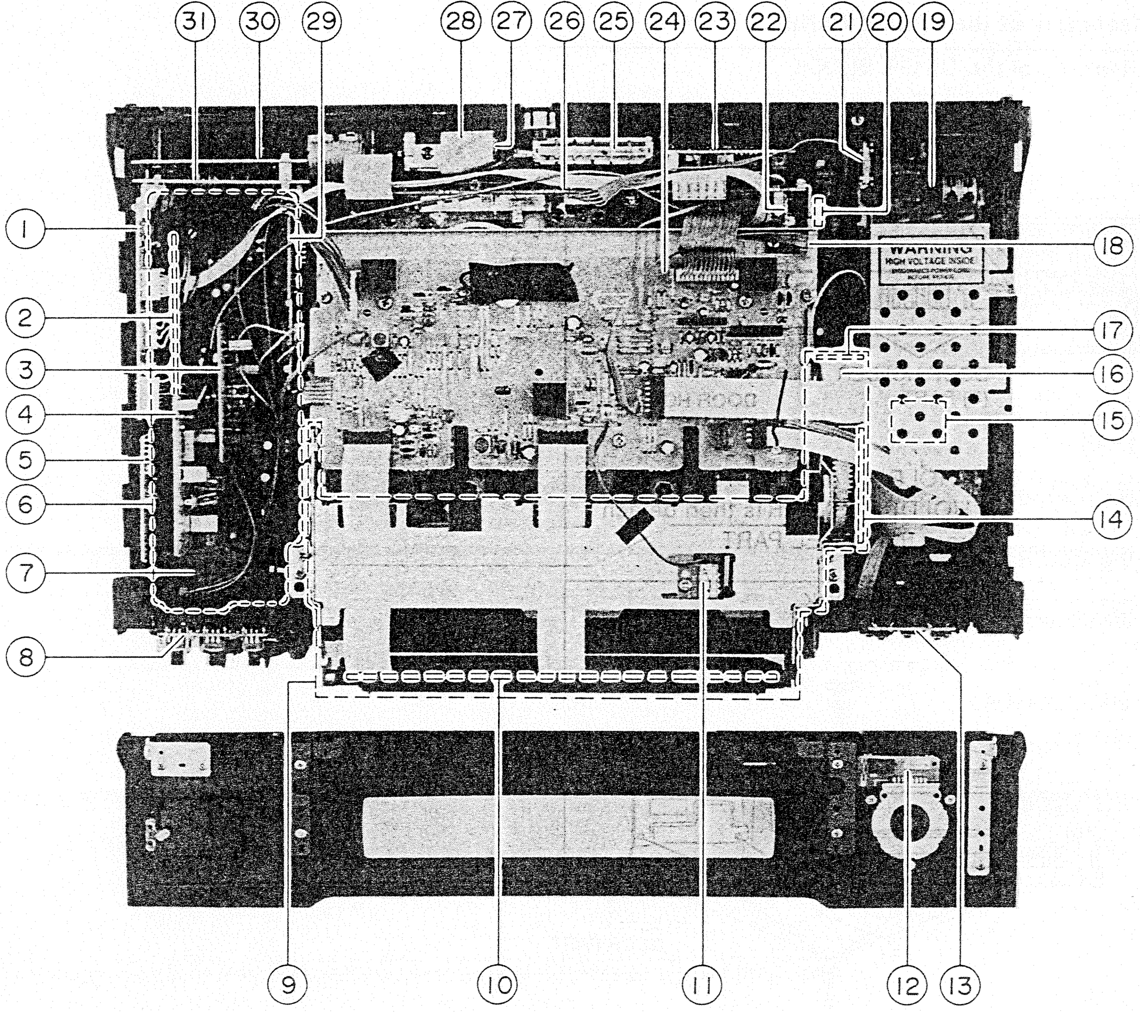
1) Pull out the JOG and SHUTTLE knobs.
2) Peel off the two DOOR STOPPERs then remove the six retaining screws.
3) Unlock the stoppers carefully then detach the DOOR (B) from the DOOR PART.

3. Removal of the JOG/SHUTTLE BLOCK


JOG / SHUTTLE BLOCK

Remove the three retaining screws then remove the JOG/SHUTTLE BLOCK

II. PRINCIPAL PARTS LOCATION


31
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4
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6
7
8
WARNING
HIGH VOLTAGE INSIDE
9
10
11
12
13

Fig. 2-1 Top view (1)

1. IN/OUT (C) PCB	16. DOOR MOTOR
2. D-NICAM PCB (EK-VN and EOH-DN only)	17. DOOR MOTOR PCB
3. CDR PCB	18. TR (C) PCB
4. D-MULTI PCB (except EK-VN and EOH-DN)	19. POWER SUPPLY PCB
5. SECAM DET & NTSC PCB (EA-D,EK-VN and EOG-VD only)	20. TR (A) PCB
6. VPST/PDCT PCB (EK-VN,EOG-VD and EOH-VD only)	21. FUSE
7. MAIN PCB	22. OSC PCB
8. FRONT PCB	23. VIF UNIT
9. DOOR BLOCK	24. OPERATION (A) PCB
10. FLD PCB (CASSETTE DOOR)	25. TUNER UNIT
11. PACK SW PCB	26. PRE AMP & Hi-Fi PCB
12. JOG/SHUTTLE PCB	27. RF CONVERTOR UNIT
13. OPERATION (B)/(C) PCB	28. EARTH PLATE
14. CAM SW PCB	29. EQ PCB
15. POWER TRANSFORMER	30. IN/OUT (A) PCB
	31. IN/OUT (B) PCB

※ The photograph on this page is of model VS-G2100EA-D

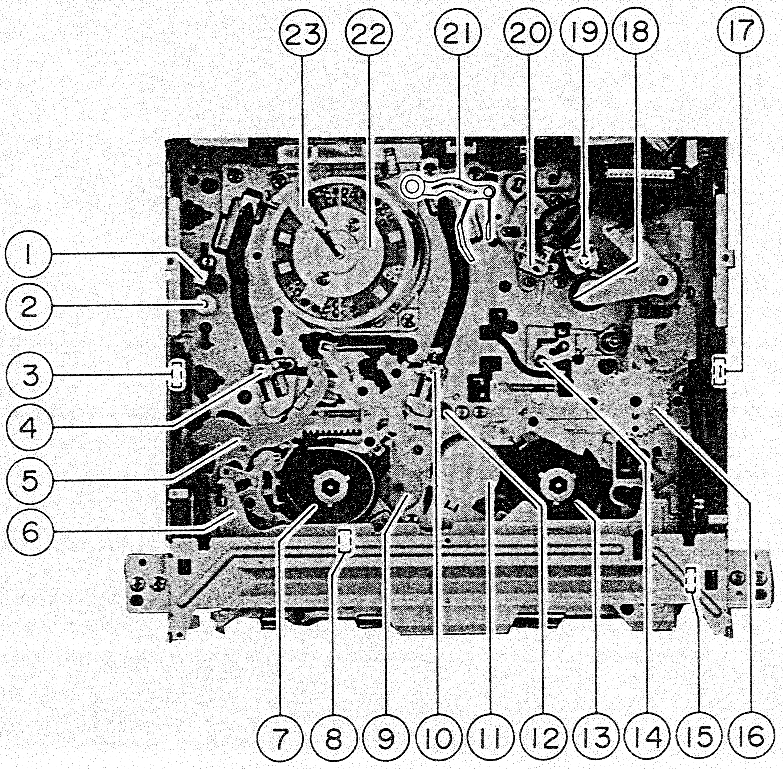


Fig. 2-2 Top view (MECHA. BLOCK)

1. FULL TRACK ERASE HEAD
2. SUPPLY TAPE GUIDE
3. END SENSOR
4. SUPPLY LOADING LEADER
5. TENSION ARM
6. CASSETTE LOAD BLOCK
7. SUPPLY REEL TABLE
8. REC SAFETY SWITCH
9. GEAR HOLDER BLOCK
10. TAKE UP LOADING LEADER
11. IDLER ARM PART
12. SENSOR LED
13. TAKE UP LOADING LEADER
14. REVIEW ARM PART
15. S-VHS TAPE DETECT SWITCH
16. PINCH GEAR
17. START SENSOR
18. PINCH ROLLER ARM PART
19. CAPSTAN MOTOR
20. A/C HEAD (AUDIO, CONTROL & SIDE ERASE HEAD)
21. HEAD CLEANER BLOCK
22. UPPER DRUM BLOCK (VIDEO, Hi-Fi & FLYING ERASE HEAD)
23. EARTH BRUSH

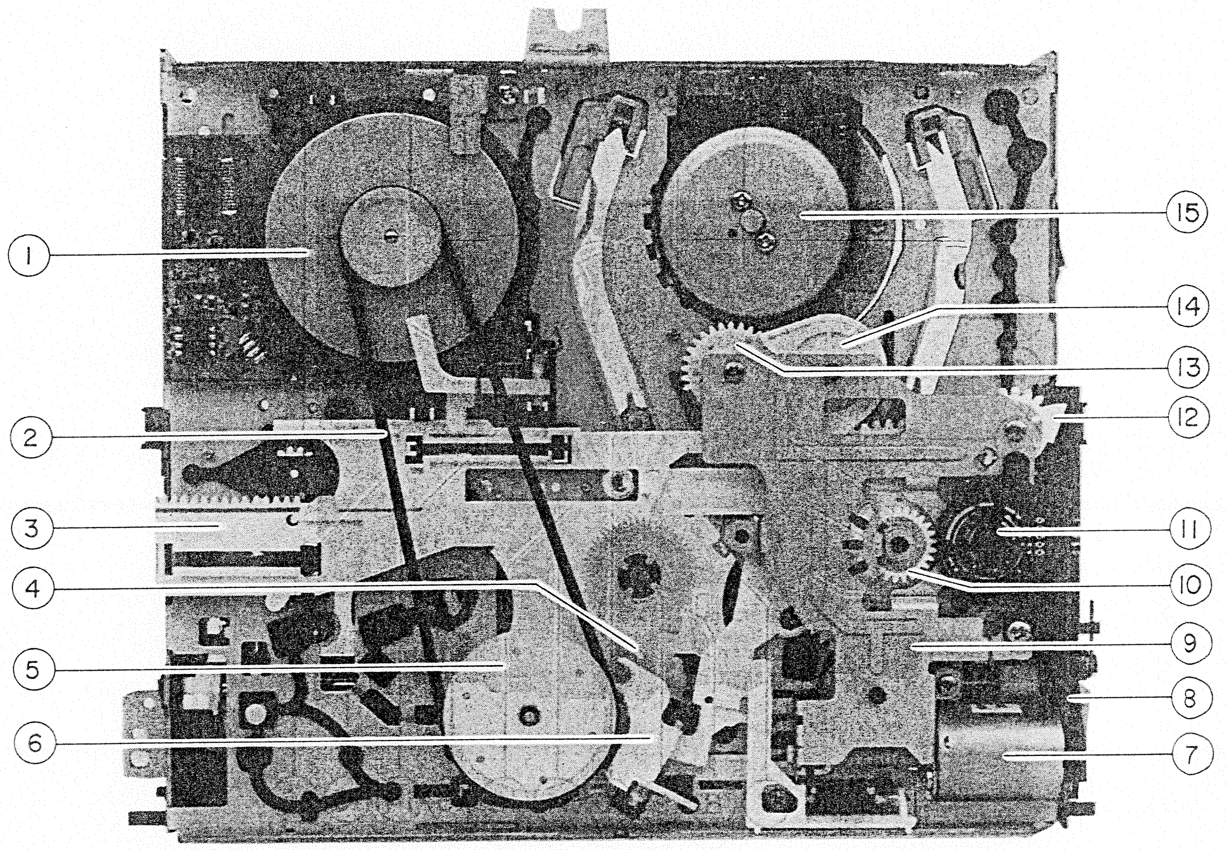


Fig. 2-3 Bottom view (MECHA. BLOCK)

1. CAPSTAN MOTOR BLOCK
2. CAPSTAN BELT
3. PINCH SLIDER
4. GEAR COUPLING BLOCK
5. CLUTCH DISK PART
6. COUPLING ARM
7. LOADING MOTOR
8. LM/MS PCB
9. LOADING DRIVE BLOCK
10. CAM SLIDER GEAR
11. MODE SELECT SWITCH
12. FRONT LOADING GEAR
13. TOGGLE (T) GEAR BLOCK
14. TOGGLE (S) GEAR BLOCK
15. DRUM MOTOR BLOCK

III. VIEWING THE OPERATION OF THE BOTTOM SIDE OF THE MECHANISM BLOCK

※ In case you want to check the operation of the bottom side of the mechanism block, proceed as follows.

3-1. REMOVAL OF THE FRONT PANEL

1) Remove the FRONT PANEL (refer to step 1-3).

3-2. LOADING A CASSETTE TAPE

1) Connect the AC power cord to the VCR and insert a tape. And then disconnect the power cord after the tape has been loaded onto the VIDEO HEAD DRUM.

3-3. REMOVAL OF THE MECHANISM BLOCK

1) Remove the three Ⓐ screws on the bottom side as shown in Fig. 3-1.

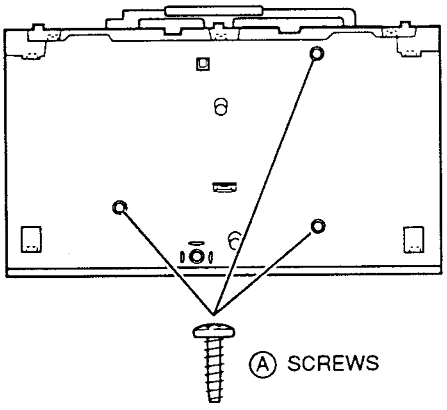


Fig. 3-1

2) Remove the two Ⓑ screws and the Ⓒ screw which retain the MECHANISM BLOCK as shown in Fig. 3-2.

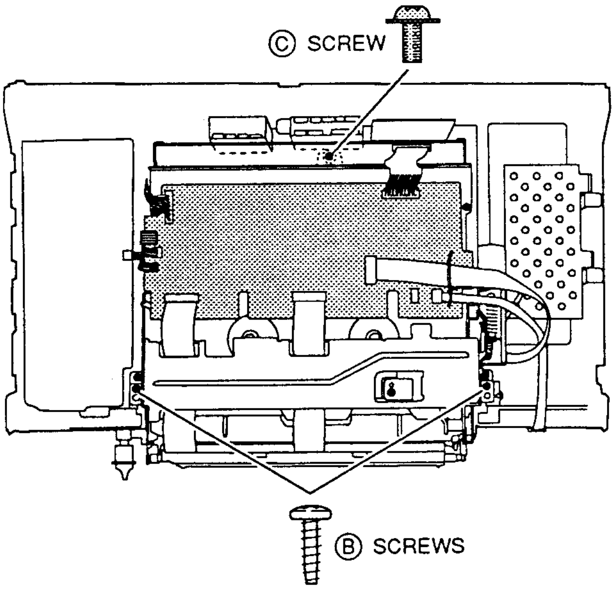


Fig. 3-2

3) Remove the MECHANISM BLOCK and place a video cassette which is no longer needed or something else that is substitutable (must be made of insulated material) on the MAIN PCB.
4) Place the MECHANISM BLOCK on the tape etc., standing it on end as shown in Fig. 3-3 with care not to damage the flat cables on the PRE AMP & Hi-Fi PCB.

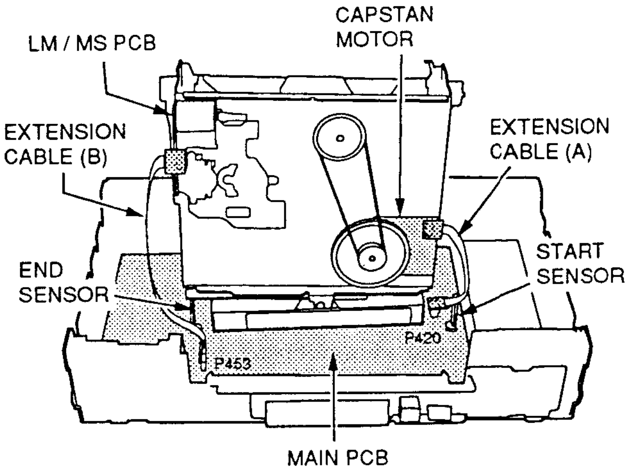


Fig. 3-3

3-4. CONNECTING THE EXTENSION CABLE

1) Connect the two extension cables (which are provided as the service jig) between the CAPSTAN MOTOR BLOCK and the P420 on the MAIN PCB, the LM/MS PCB and P453 on the MAIN PCB.

NOTE : The "FRONT" mark on the extension cable (A) PCB must be facing front when connecting.

3-5. TURNING THE POWER ON

1) Engage the test mode (refer to in the information section, "PRESETS IN THE TEST MODE").
2) Normal playback and CUE, REVIEW modes can be operated in this condition.

NOTE : Once the tape has been ejected, it is not possible to re-insert the tape in this condition. Never press the stop button twice at one time except you want to eject the tape. If the tape is ejected, and you still want to check the operation, repeat the steps 3-2 to 3-5.

IV. DISASSEMBLY OF THE MAIN COMPONENTS

4-1. REMOVAL OF THE MECHANISM BLOCK

NOTE : Some parts in the mechanism block require complete removal of the mechanism block from the chassis when performing servicing.
Set the loading mechanism to the "EJECT" position by pressing the EJECT button. Then disconnect the AC power plug from the AC socket before proceeding.

4-1-1. Removal of the FRONT PANEL BLOCK

1) Remove the FRONT PANEL BLOCK (refer to step 1-3 on page 8)

4-1-2. Turning the OPERATION (A) PCB

1) Disconnect the P32 connector on the OPERATION (A) PCB.
2) Remove the two Ⓐ screws and then turn the OPERATION (A) PCB to the forward direction as shown in Fig. 4-1.

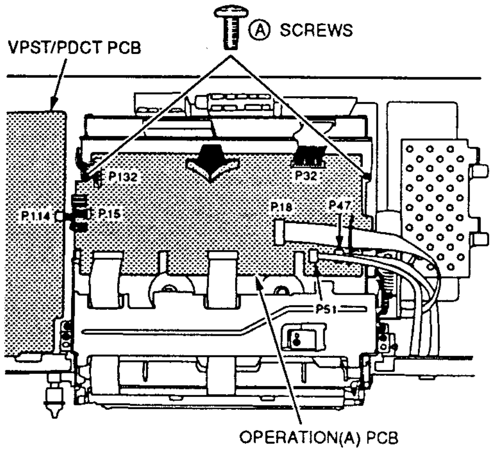


Fig. 4-1

4-1-3. Removal of the PRE AMP & Hi-Fi PCB

1) Detach the OSC PCB from the PRE AMP & Hi-Fi PCB by pulling it forward.

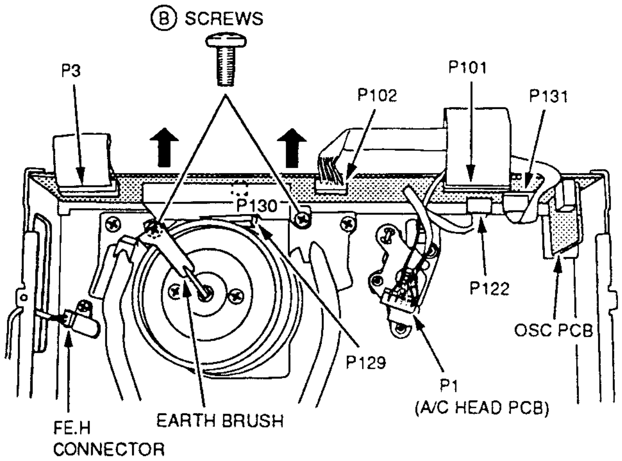


Fig. 4-2

2) Disconnect the two flat cables from the P3 and P101 connectors respectively and then disconnect the P102, P122 and P131 connectors.
3) Disconnect the P1 connector on the A/C HEAD PCB.
4) Remove one of the Ⓑ screw and remove the EARTH BRUSH.
5) Remove the other Ⓑ screw, then press the lower side of the shield case in the direction of the arrow as shown in Fig. 4-2.
6) Proceed in the reverse order for installation. Carefully align the connectors between the one on the DRUM MOTOR PCB, one on the LOWER DRUM and P129, P130 connectors on the PRE AMP & Hi-Fi PCB when re-attaching.
To make insertion easier, remove the two mechanism block retaining screws on the bottom as shown in Fig. 4-3 and Ⓔ screw (shown in Fig. 4-5), then while pulling the back part of the mechanism block upward, connect the connectors properly.

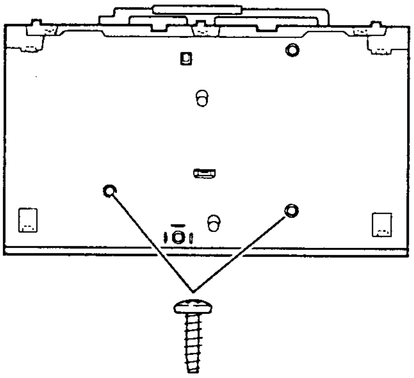


Fig. 4-3

4-1-4. Removal of the TR (A) PCB

1) Remove the Ⓒ transistor retaining screw, then remove the TR (A) PCB from the MECHANISM BLOCK.

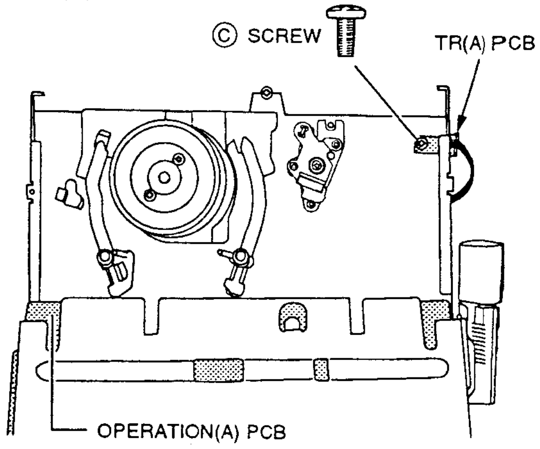


Fig. 4-4

4-1-5. Removal of the MECHANISM BLOCK

1) Disconnect the three flat cables from the P18, P47 and P51 connectors on the OPERATION (A) PCB respectively as shown in Fig. 4-1.
2) Disconnect the P15 and P132 connectors on the OPERATION (A) PCB.
3) Disconnect the P114 connector on the VPST/PDCT PCB (EK-VN, EOG-VD & EOH-VD models only).

4) Disconnect the P48 connector on the FRONT PCB.

5) Remove the three retaining screws on the bottom (refer to Fig. 3-1 on page 13).

6) Remove the two Ⓓ screws and the Ⓔ screw which retain the MECHANISM BLOCK as shown in Fig. 4-5.

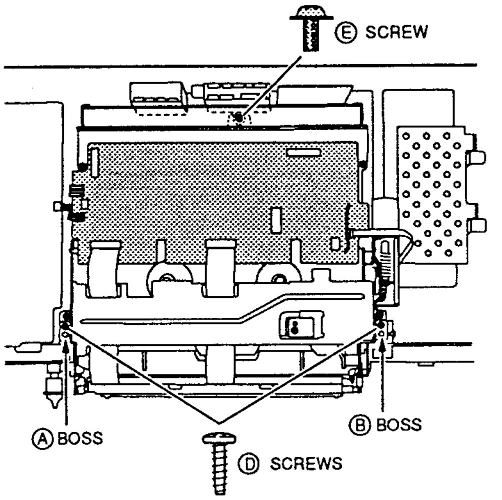


Fig. 4-5

7) Pull up the MECHANISM BLOCK carefully for detaching it from the chassis and the MAIN PCB.

4-1-6. Installation of the MECHANISM BLOCK

1) Carefully align the Ⓐ and Ⓑ bosses on the chassis with their corresponding holes on the MECHANISM BLOCK and then tighten the three screws (refer to Fig. 4-5).

2) Proceed in the reverse order of 4-1-1 to 4-1-5 for installation.

4-2. REMOVAL OF THE DOOR BLOCK

4-2-1. Removal of the DOOR BLOCK

1) Remove the MECHANISM BLOCK (refer to 4-1).

2) Remove the two Ⓐ screws on the DOOR BLOCK.

3) Disconnect the connector on the FULL TRACK ERASE HEAD.

4) Carefully remove the DOOR BLOCK from the MECHANISM BLOCK.

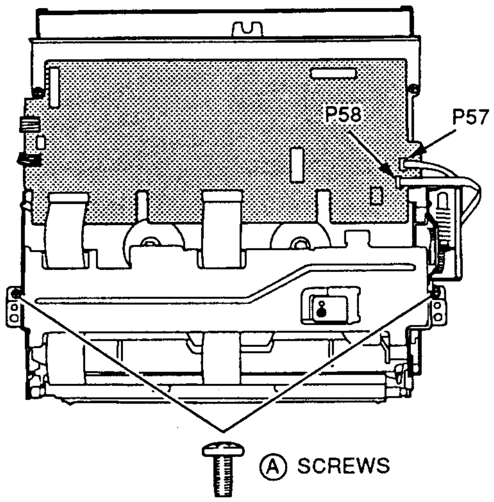


Fig. 4-6

4-2-2. Replacement of the DOOR MOTOR

1) Disconnect the P57 and P58 connectors on the OPERATION (A) PCB as shown in Fig. 4-6.

2) Remove the Ⓑ screw and remove the CAM SW PCB.

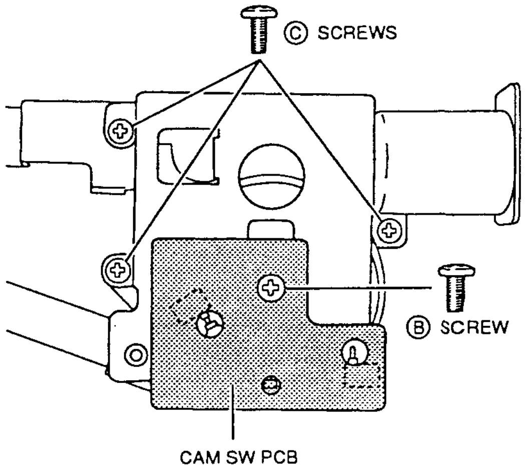


Fig. 4-7

3) Remove the three Ⓒ screws then remove the DOOR CAM BLOCK

4) Remove the two Ⓓ screws then replace the DOOR MOTOR.

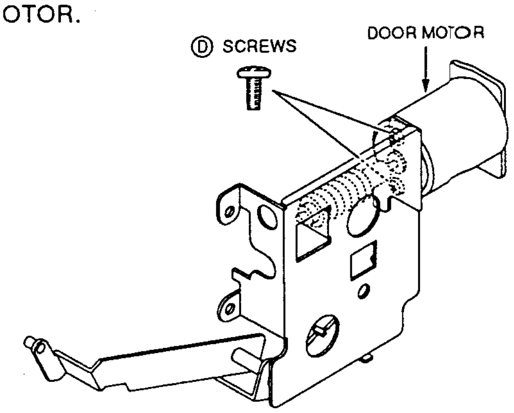


Fig. 4-8

5) When re-assembling, move the fan-shaped GEAR to the position that it is in when the door is fully closed, then place the CAM GEAR so that the Ⓐ line aligns with the right edge of the fan shaped gear as shown in Fig. 4-9.

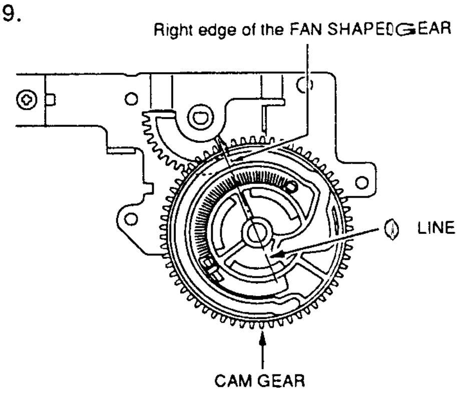


Fig. 4-9

6) Place the CAM SW PCB at the original position. Take care not to damage the pins of the microswitches.

4-2-3. Removal of the FLD PCB

1) Disconnect the two flat cables from the P49 and P50 connectors on the OPERATION (A) PCB.

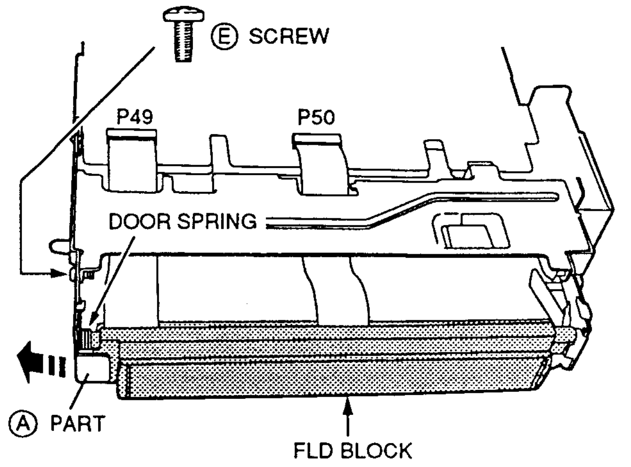


Fig. 4-10

2) Remove the Ⓔ screw and while pressing the Ⓐ part to the left gently, carefully remove the FLD BLOCK not to lose the DOOR SPRING.
3) Insert a flat head screwdriver to the gap of the FLD case (MASK CASE & MASK HOLDER) and carefully release the stoppers as shown in Fig. 4-11.

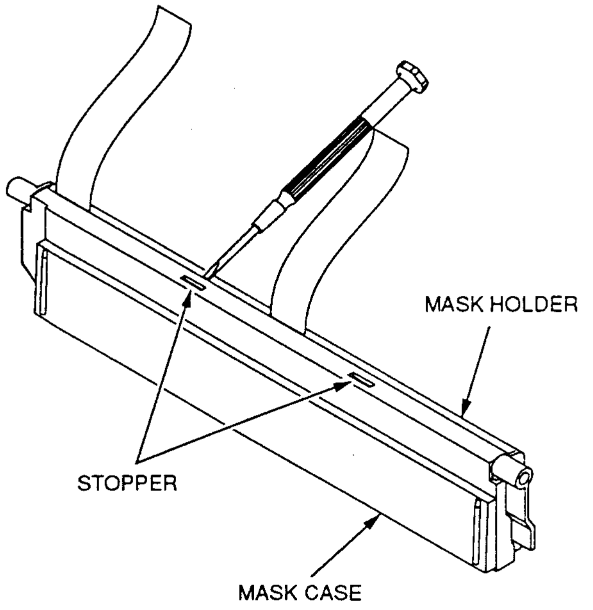


Fig. 4-11

4) Re-assemble in the reverse order for installation.

4-3. REMOVAL OF THE EJECTOR BLOCK

4-3-1. Removal of the CASSETTE LOAD BLOCK

1) Remove the MECHANISM BLOCK (refer to 4-1, "REMOVAL OF THE MECHANISM BLOCK").
2) Remove the DOOR BLOCK (refer to 4-2-1, "Removal of the DOOR BLOCK").
3) Remove the two Ⓐ screws on the UPPER PLATE, as shown in Fig. 4-12 then remove the UPPER PLATE.

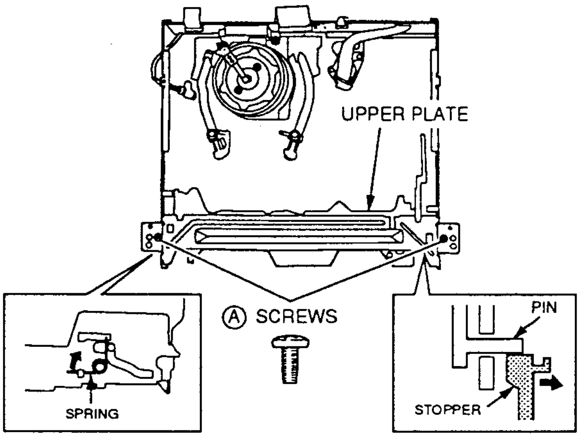


Fig. 4-12

4) Unhook the spring and remove it as shown in Fig. 4-12.
5) While pressing the right STOPPER in the direction of the arrow (refer to Fig. 4-12), gently remove the right side pin of the CASSETTE LOAD BLOCK from the rail by pulling it in the forward direction. Next, remove the left side pin in the same manner, then remove the CASSETTE LOAD BLOCK. To avoid damaging the pins of the CASSETTE LOAD BLK and the rail of the MECHA. FRAME, do not use excessive force when removing the CASSETTE LOAD BLK.

4-3-2. Removal of the LOADING ARM BLK

1) Release the stopper on the right side end of the LOADING ARM BLK's shaft (refer to Fig. 4-13) by pressing the stopper tab with a flat head (—) screwdriver. Then remove the shaft's right end from the bracket.

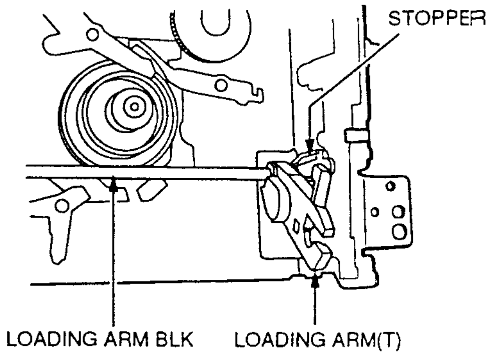


Fig. 4-13

2) Hold the LOADING ARM (T) and then pull out the shaft's left end from the bracket. Take special care when removing it to avoid damaging the pins (refer to Fig. 4-13).

4-3-3. Reassembling

1) Proceed in the reverse order of 4-3-1 to 4-3-2 for installation.

4-4. REMOVAL OF THE MODE SELECT SWITCH

Before proceeding with removal of the MODE SELECT SWITCH, the loading mechanism must be set to the "reference" position. If it has not already been set, use the following procedure to set the reference position.

※ Connect a 6V battery to the loading motor until both the cam slider gear and mode select switch reach the reference position (refer to Fig. 4-15).

4-4-1. Removal of the MODE SELECT SWITCH

1) Unsolder the 5 leads of the mode select switch.

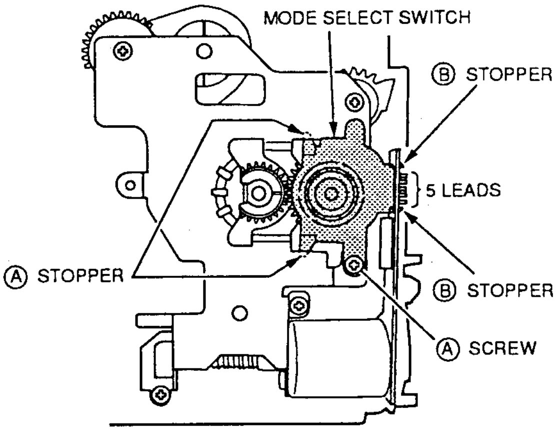


Fig. 4-14

2) Remove the Ⓐ screw.
3) While releasing the two Ⓐ stoppers and two Ⓑ stoppers, carefully remove the MODE SELECT SWITCH by pulling it up and to the left.

4-4-2. Installation of the MODE SELECT SWITCH

1) Install the mode select switch in the reverse order of 4-4-1. When mounting the mode select switch, align the mode select switch's Ⓐ mark with the Ⓑ mark on the cam slider gear as shown in Fig. 4-15.

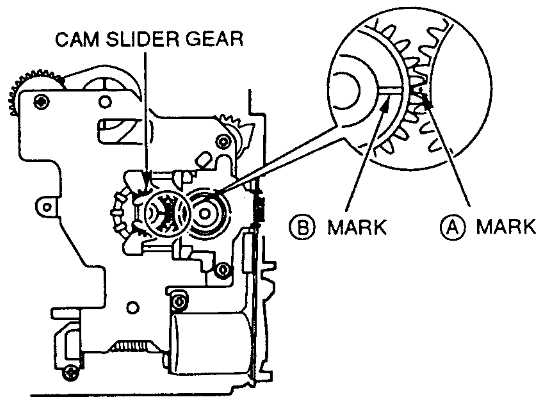


Fig. 4-15

4-5. DISASSEMBLY OF THE LOADING DRIVE BLOCK

※ Set the loading mechanism to the "reference" position. Refer to 4-4, "REMOVAL OF THE MODE SELECT SWITCH" before proceeding.

4-5-1. Removal of the LOADING DRIVE BLOCK

1) Remove the MODE SELECT SWITCH (refer to 4-4-1 "removal of the MODE SELECT SWITCH") if necessary.
2) Remove the Ⓐ, Ⓑ, Ⓒ and Ⓓ screws then remove the LOADING DRIVE BLOCK as shown in Fig. 4-16.

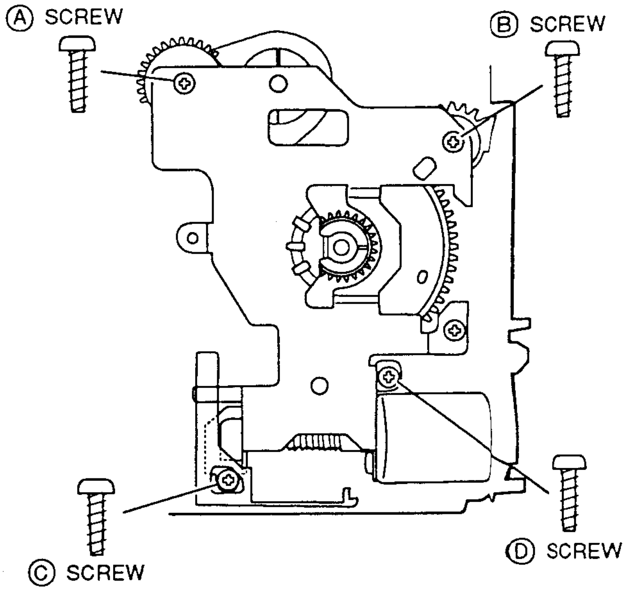


Fig. 4-16

4-5-2. Replacement of the LOADING MOTOR

1) Remove the LOADING DRIVE BLOCK (refer to 4-5-1)
2) Unsolder the two leads of the LOADING MOTOR.
3) Remove the two installation screws.

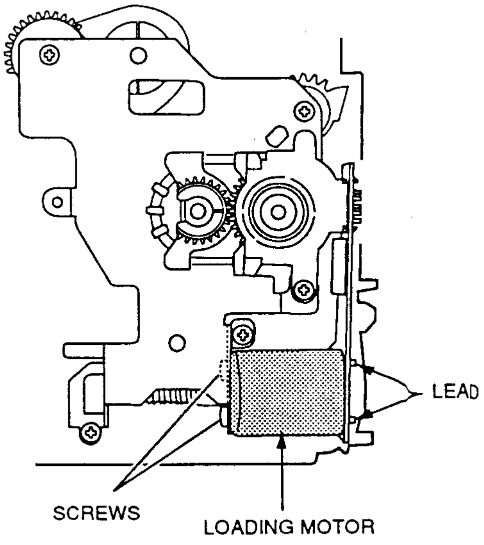


Fig. 4-17

4) Reassemble in the reverse order for installation.

4-6. REASSEMBLY OF THE LOADING MECHANISM BLK

4-6-1. Position of the TOGGLE GEARs (T) and (S)

1) Set the TOGGLE GEARs (T) and (S) to the unloaded position with your fingers. Align the Ⓐ mark on the TOGGLE GEAR (S) with the Ⓐ hole of the TOGGLE GEAR (T) as shown in Fig. 4-18.

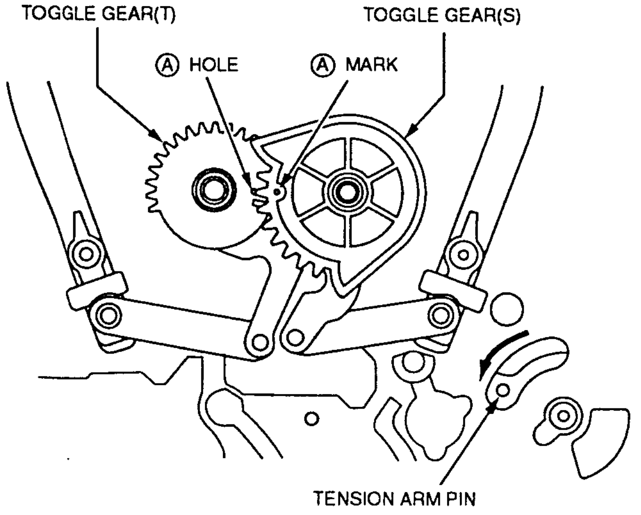

TOGGLE GEAR(T)
TOGGLE GEAR(S)
Ⓐ HOLE
Ⓐ MARK
TENSION ARM PIN

Fig. 4-18

NOTE : When positioning the TOGGLE GEAR (S), the TENSION ARM's pin should be moved in the direction of the arrow before placing the TOGGLE GEAR (S) onto its shaft.

4-6-2. Installation of the CAM SLIDER GEAR & FRONT LOADING GEAR

1) Attach the WORM WHEEL GEAR as shown in Fig. 4-19.

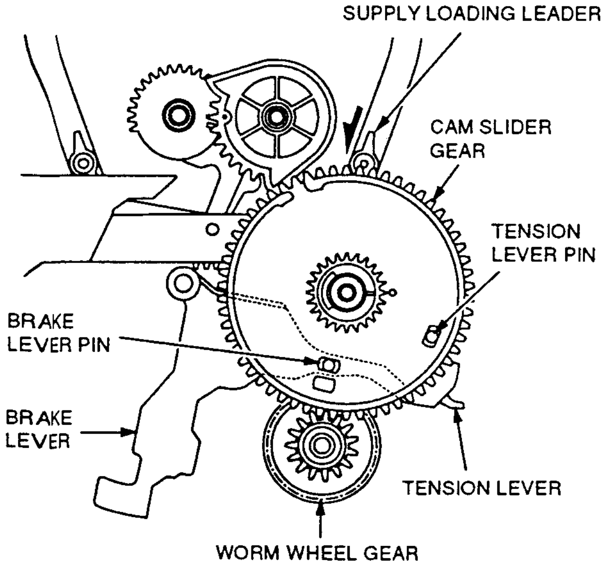

SUPPLY LOADING LEADER
CAM SLIDER GEAR
TENSION LEVER PIN
BRAKE LEVER PIN
BRAKE LEVER
TENSION LEVER
WORM WHEEL GEAR

Fig. 4-19

2) Place the CAM SLIDER GEAR on the shaft and adjust the position of the BRAKE LEVER and TENSION LEVER so that both pins appear through the holes on the CAM SLIDER GEAR as shown in Fig. 4-19. When inserting the CAM SLIDER GEAR onto its shaft, press the SUPPLY LOADING GEAR slightly in the direction of the arrow to make installation easy.
3) Attach the FRONT LOADING GEAR so that the Ⓐ mark on the FRONT LOADING GEAR aligns with the Ⓑ mark on the FRONT LOADING SLIDER and that the Ⓒ mark on the FRONT LOADING GEAR aligns with the Ⓓ mark on the CAM SLIDER GEAR as shown in Fig. 4-20.

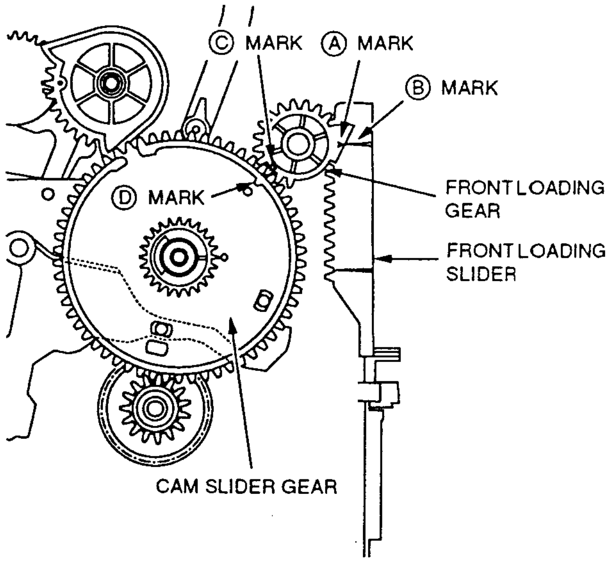

Ⓒ MARK
Ⓐ MARK
Ⓑ MARK
Ⓓ MARK
FRONT LOADING GEAR
FRONT LOADING SLIDER
CAM SLIDER GEAR

Fig. 4-20

4-6-3. Installation of the LOADING BLOCK & MODE SELECT SWITCH

1) Install the LOADING DRIVE BLOCK as shown in Fig. 4-21. Align the Ⓐ mark on the MODE SELECT SWITCH's gear with the Ⓑ mark on the CAM SLIDER GEAR when installing.

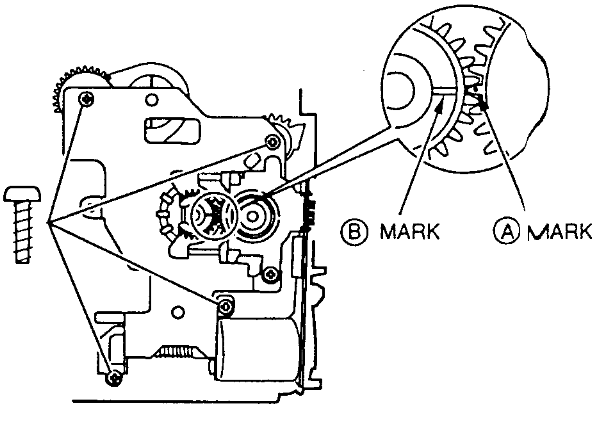


Fig. 4-21

4-7. REPLACEMENT OF THE DISK CLUTCH BLOCK & GEAR COUPLING BLOCK

1) Remove the SLIT WASHER as shown in Fig. 4-22.

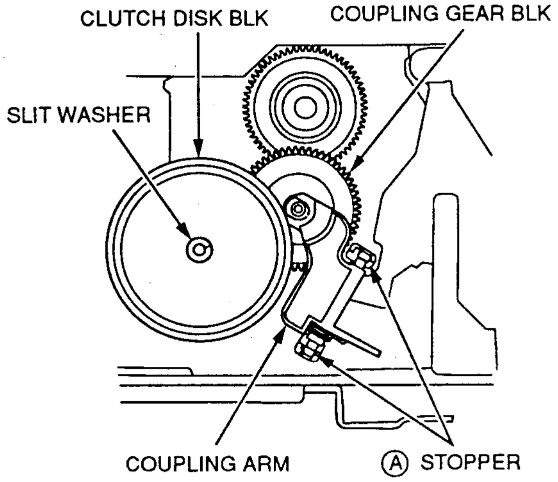

CLUTCH DISK BLK
COUPLING GEAR BLK
SLIT WASHER
COUPLING ARM
Ⓐ STOPPER

Fig. 4-22

2) Release the two Ⓐ stoppers of the COUPLING ARM and pull up the CLUTCH DISK BLOCK and COUPLING GEAR BLOCK at the same time.
3) Reassemble in the reverse order for installation.

4-8. REPLACEMENT OF THE REVIEW BRAKE PART & IDLER PART

4-8-1. Replacement of the REVIEW BRAKE PART

1) Un hook the Ⓐ spring, then release the stopper of the REVIEW BRAKE PART and remove it.

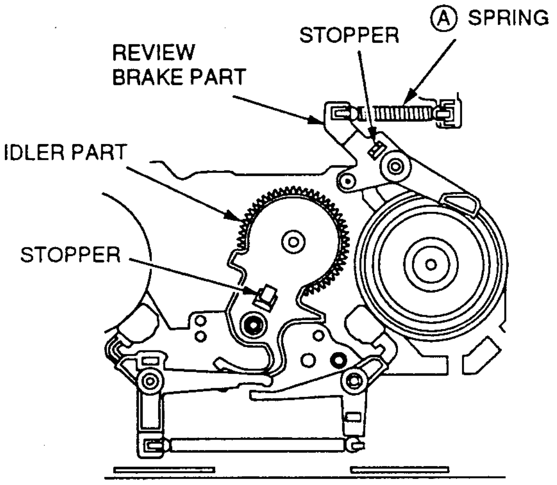

Ⓐ SPRING
STOPPER
REVIEW BRAKE PART
IDLER PART
STOPPER

Fig. 4-23

2) Reassemble in the reverse order for installation.

4-8-2. Replacement of the IDLER PART

1) Remove the CASSETTE LOAD BLOCK & LOADING ARM BLOCK. (Refer to 4-3, "Removal of the EJECTOR BLOCK".)
2) Release the stopper of the IDLER PART and remove it as shown in Fig. 4-23.
3) Reassemble in the reverse order for installation.

4-9. REPLACEMENT OF THE PINCH ROLLER BLOCK

1) Remove the Ⓐ spring, then remove the PINCH ROLLER ARM BLOCK by turning it in the direction of the arrow and pulling it upward as shown in Fig. 4-24.

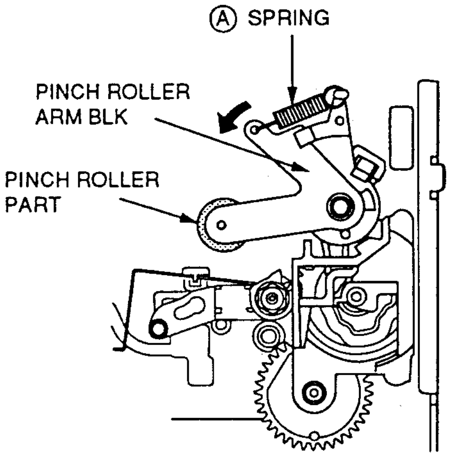

Ⓐ SPRING
PINCH ROLLER ARM BLK
PINCH ROLLER PART

Fig. 4-24

2) Reassemble in the reverse order for installation.

4-10. DISASSEMBLY OF THE PINCH LEVER & PINCH HOLDER

4-10-1. Removal of the PINCH LEVER and PINCH HOLDER

1) Remove the two Ⓐ screws then remove the PINCH LEVER and PINCH HOLDER.

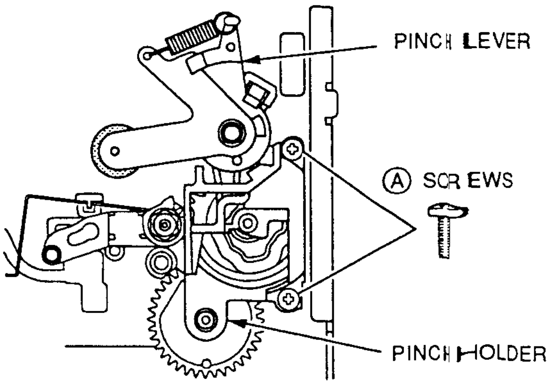

PINCH LEVER
Ⓐ SCREWS
PINCH HOLDER

Fig. 4-25

4-10-2. Installation of the PINCH LEVER and PINCH HOLDER

1) Align the Ⓐ hole on the PINCH SLIDER with the Ⓐ mark on the PINCH GEAR through the hole on the chassis as shown in Fig. 4-26.

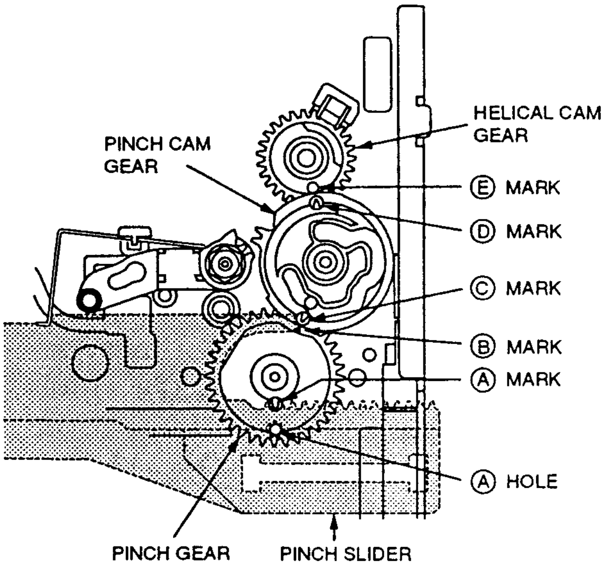

PINCH CAM GEAR
HELICAL CAM GEAR
Ⓔ MARK
Ⓓ MARK
Ⓒ MARK
Ⓑ MARK
Ⓐ MARK
Ⓐ HOLE
PINCH GEAR
PINCH SLIDER

Fig. 4-26

2) Align the Ⓑ mark on the PINCH GEAR with the Ⓒ mark on the PINCH CAM GEAR and the Ⓓ mark on the PINCH CAM GEAR with the Ⓔ mark on the HELICAL CAM GEAR as shown in Fig. 4-26.
3) Install the PINCH LEVER and PINCH HOLDER in the reverse order.

4-11. REPLACEMENT OF THE CAPSTAN MOTOR BLOCK

1) Remove the three Ⓐ screws as shown in Fig. 4-27.

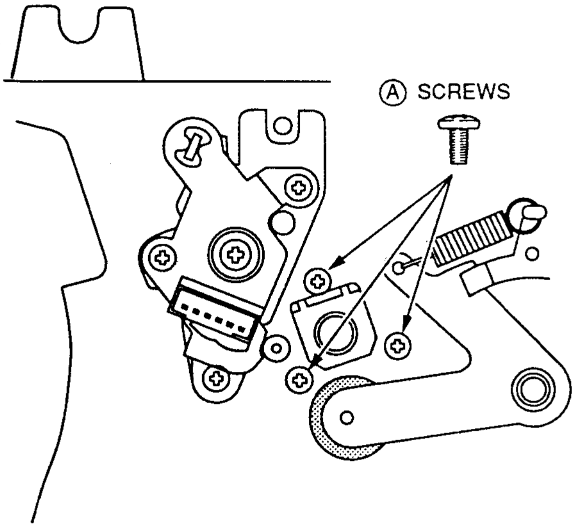


Fig. 4-27

2) Remove the CAPSTAN BELT.
3) Remove the Ⓑ screw and then remove the CAPSTAN MOTOR HOLDER.

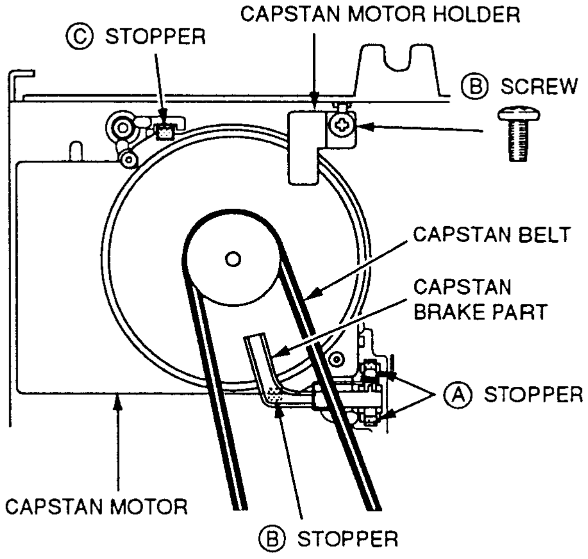

Ⓒ STOPPER
CAPSTAN MOTOR HOLDER
Ⓑ SCREW
CAPSTAN BELT
CAPSTAN BRAKE PART
Ⓐ STOPPER
CAPSTAN MOTOR
Ⓑ STOPPER

Fig. 4-28

4) Release the two Ⓐ stoppers and remove the CAPSTAN BRAKE PART.
5) Remove the CAPSTAN MOTOR BLOCK while releasing the Ⓑ and Ⓒ stoppers.
6) Proceed in the reverse order for installation.

4-12. DRUM MOTOR PC BOARD REPLACEMENT

1) Remove the two Ⓐ screws on the ROTARY PLATE and then remove it.
(If the PRE AMP & Hi-Fi PCB is not removed yet, remove it first before removing the Ⓐ screws. Refer to 4-1-3, "Removal of the PRE AMP & Hi-Fi PCB".)

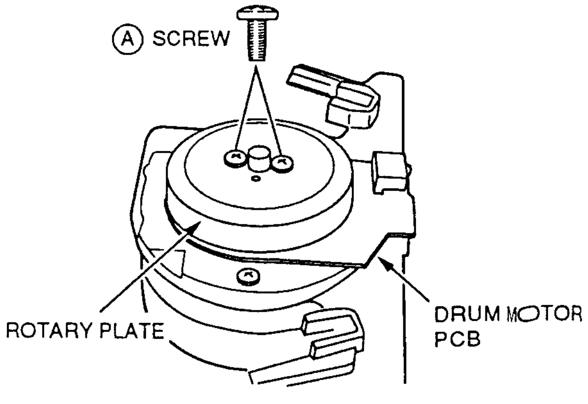

Ⓐ SCREW
ROTARY PLATE
DRUM MOTOR PCB

Fig. 4-29

2) Remove the three Ⓑ screws which retain the DRUM MOTOR PCB and replace it.

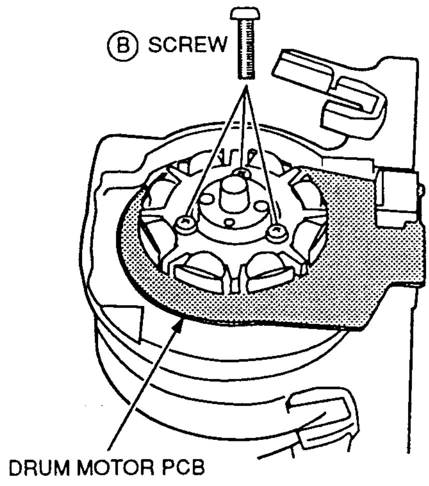

Ⓑ SCREW
DRUM MOTOR PCB

Fig. 4-30

3) Attach the ROTARY PLATE to the collar preload so that the rotary plate Ⓒ hole and collar preload Ⓓ hole line up.

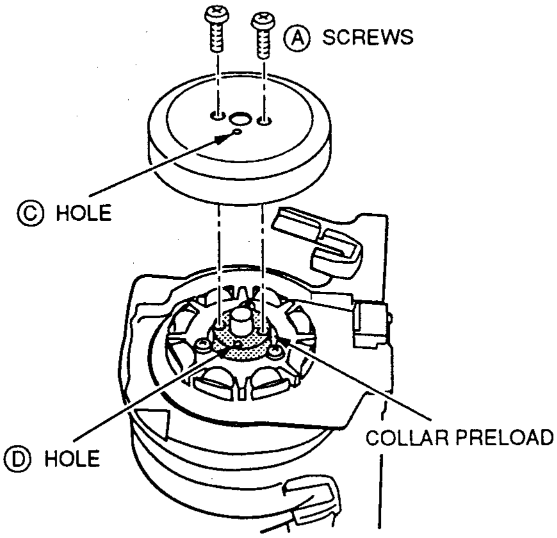

Ⓐ SCREWS
Ⓒ HOLE
Ⓓ HOLE
COLLAR PRELOAD

Fig. 4-31

4) After replacement, PB switching point adjustment (INFORMATION, PRESET IN THE TEST MODE, #3) is absolutely necessary for the proper performance.

4-13. REPLACEMENT OF THE UPPER DRUM

4-13-1. Removal of the UPPER DRUM

1) Unsolder the fourteen relay leads and remove the two upper drum fixing screws as shown in Fig. 4-32.

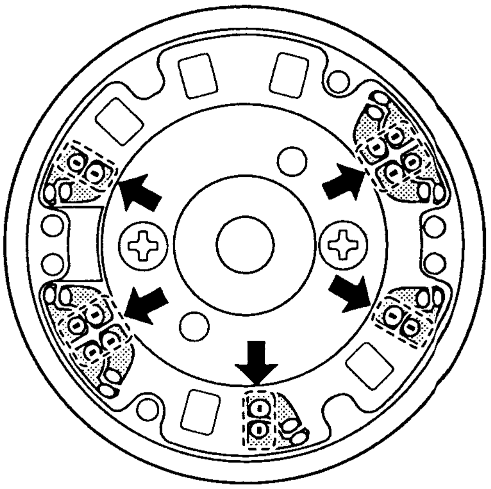


Fig. 4-32

2) Gently lift and remove the UPPER DRUM.

4-13-2. Installation of the UPPER DRUM

1) Attach the UPPER DRUM to the LOWER DRUM ROTOR, so that the upper drum's white mark and lower drum rotor's white mark line up, as shown in Fig. 4-33.

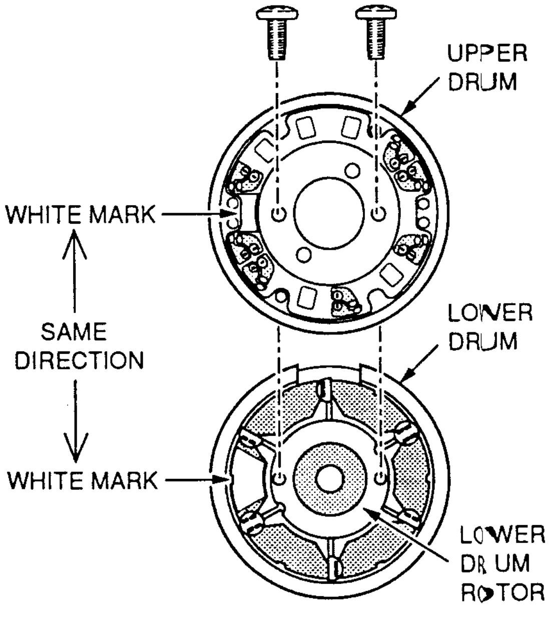

UPPER DRUM
WHITE MARK
SAME DIRECTION
WHITE MARK
LOWER DRUM
LOWER DRUM ROTOR

Fig. 4-33

NOTE : Because height precision is required for proper performance, and because head tips are fragile, the following points should be noted when replacing the UPPER DRUM BLOCK.

(a) Do not loosen the set screw on the collar preload.
(b) Before fixing, use alcohol to clean both surfaces where the upper drum and the rotary transformer meet.
(c) If the UPPER DRUM can not be inserted on to the shaft easily during installation, clean the hole in the UPPER DRUM with alcohol and put a little oil on the shaft.
(d) Make sure that the upper drum fixing screw holes, on the rotary transformer part, and the upper drum fixing screw penetration holes match exactly before inserting the fixing screws.
(e) Tighten the two upper drum fixing screws alternately and gradually.

4-13-3. After replacement

After replacement, the following adjustments are necessary for the proper performance.

1) Control head phase adjustment. (MECHANICAL ADJUSTMENT 5-3-3.)
2) PB switching point adjustment. (INFORMATION, PRESET IN THE TEST MODE #3)
3) ENV. DET (I-HQ) adjustment. (INFORMATION, PRESET IN THE TEST MODE #5)
4) Video head REC current adjustment. (VI. ELECTRICAL ADJUSTMENT Steps 5 & 6)

4-14. REMOVAL OF THE POWER SUPPLY PCB

1) Remove the BOTTOM COVER (refer to step 1-2 on page 8).
2) Disconnect the P2 connector on the POWER SUPPLY PCB as shown in Fig. 4-34.

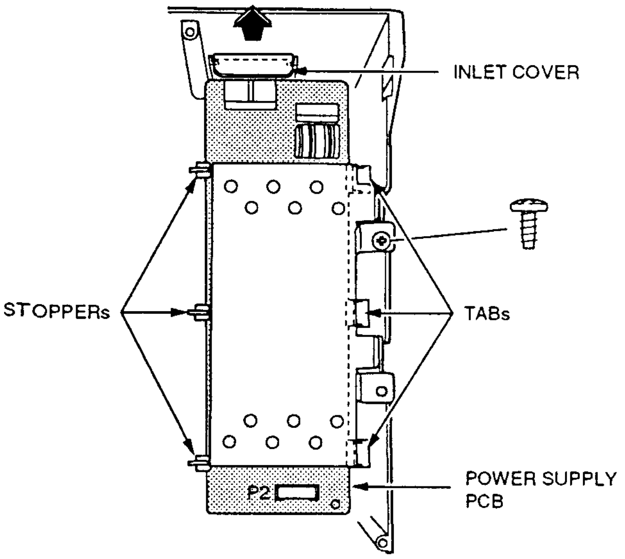


Fig. 4-34

3) Remove the shield cover retaining screw.
4) While pressing the tabs located at the bottom side in the direction of the arrow, remove the INLET COVER by pulling it up.

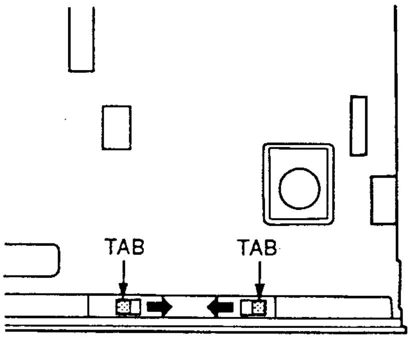


Fig. 4-35

5) While releasing the three tabs, pull up the right side of the POWER SUPPLY PCB carafully then remove the POWER SUPPLY PCB from the chassis as shown in Fig. 4-34.
6) Proceed in the reverse order for installation.

4-15. REMOVAL OF THE MAIN PCB

4-15-1. Removal of the VPST/PDCT PCB (EK-VN, EOG-VD & EOH-VD models only)

1) Disconnect the six connectors (P104, P112, P113, P114, P134 and P142) on the VPST/PDCT PCB.

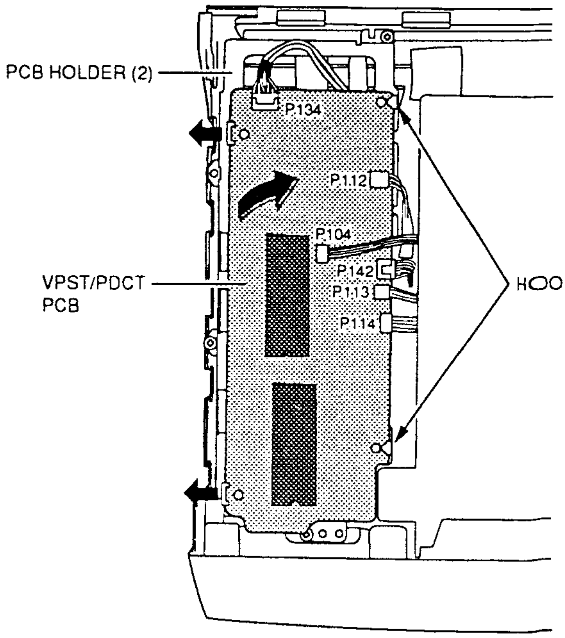


Fig. 4-36

2) Unlock the two stoppers and turn the VPST/PDCT PCB to the right.
Next, release the two hooks and remove the VPST/PDCT PCB from the PCB HOLDER (2).

4-15-2. Removal of the PCB HOLDER (2)

1) Remove the three retaining screws and remove the PCB HOLDER (2) from the chassis.

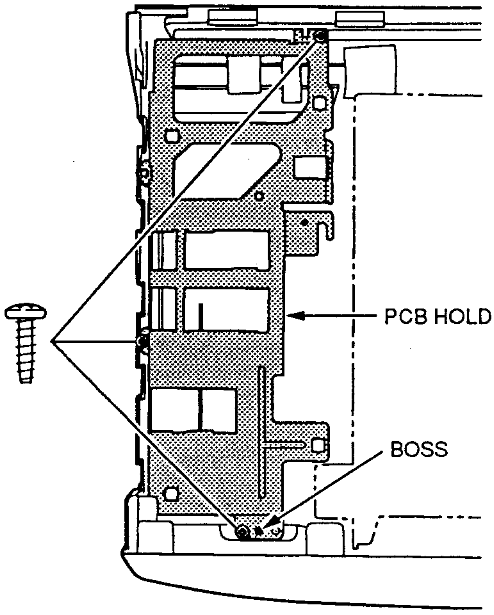


Fig. 4-37

4-15-3. Removal of the MAIN PCB

1) Remove the FRONT PANEL BLOCK (refer to Fig. 1-3 on page 8).
2) Remove the MECHANISM BLOCK (refer to 4-1, "REMOVAL OF THE MECHANISM BLOCK").
3) Disconnect the P2 connector on the POWER SUPPLY PCB (refer to Fig. 4-34).
4) Disconnect the P344 connector on the IN/OUT (C) PCB.
5) Lift up the REAR JACK PANEL by pressing the two stoppers in the direction of the arrows as shown in Fig. 4-38.

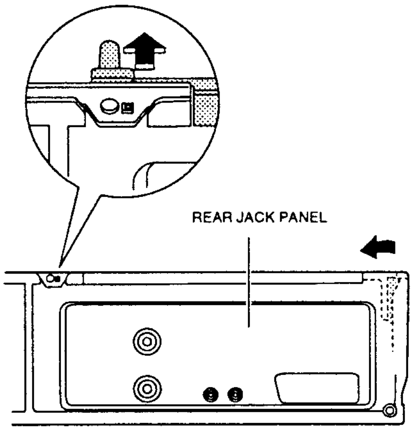


Fig. 4-38

6) Remove the MAIN PCB retaining screw, then carefully remove the MAIN PCB from the chassis while releasing the four tabs as shown in Fig. 4-39.

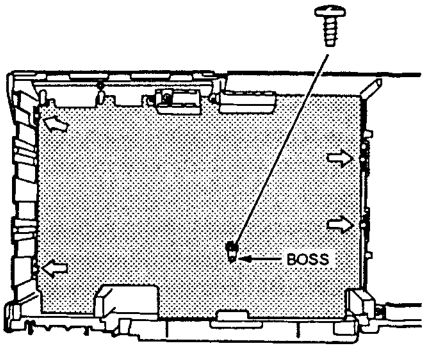


Fig. 4-39

7) Re-assemble in the reverse order for installation.

V. MECHANICAL ADJUSTMENT

NOTE : Turn the OPERATION (A) PCB to the forward direction before proceeding (refer to step 4-1-2 on page 14).

5-1. BACK TENSION ADJUSTMENT

1) Prepare a video cassette tape which you no longer need. Remove both tape reels and the tape protection cover from the cassette tape. Next, cover the video cassette's left and right detection holes with black adhesive tape.
2) Engage the playback mode using with a tapeless tape.
3) Confirm the distance between the three marks (lines) on the TENSION ARM and the Ⓐ mark on the MECHA. CHASSIS so that the Ⓐ mark aligns with the center line on the TENSION ARM as shown in Fig. 5-1.
4) If the result is not satisfactory, eject the tape and adjust the TENSION ADJUST repeatedly until a satisfactory result is achieved.

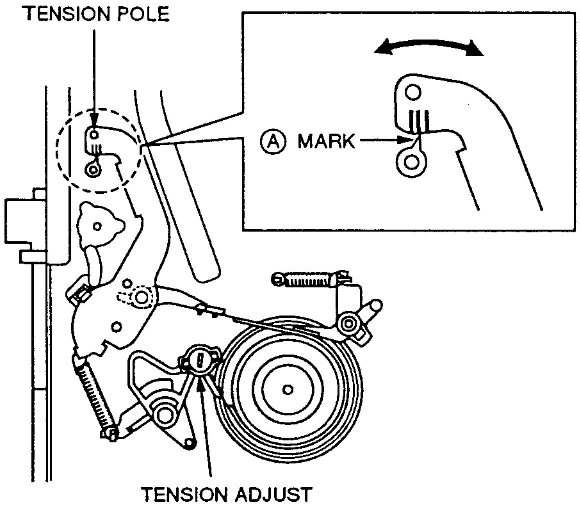


Fig. 5-1

5-2. TAPE TRANSPORT ADJUSTMENTS

NOTE : The following adjustments are required only when an irregularity is found, since these adjustments are precisely set at the factory.

5-2-1. Tape curl adjustment at the TAKE-UP TAPE GUIDE

1) Play back a recorded tape which is no longer needed.
2) Turn the Ⓐ screw on the A/C HEAD BLK, until the edge of the tape barely touches the lower part of the TAKE UP TAPE GUIDE, without any curl or wrinkle.

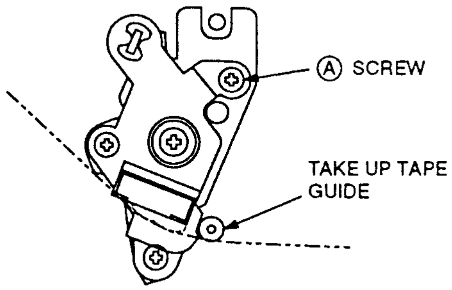


Fig. 5-2

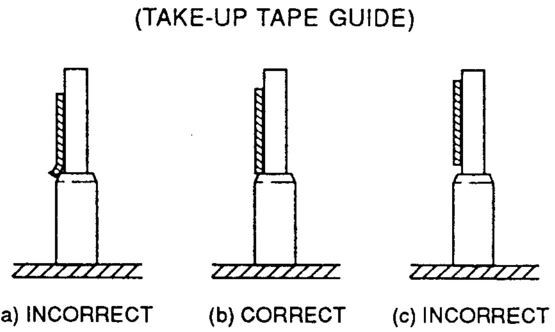


Fig. 5-3

3) Once the Ⓐ screw is adjusted, A/C HEAD height and azimuth adjustment is required. (Refer to 5-3. A/C HEAD POSITION ADJUSTMENT.)

5-2-2. Tape curl adjustment at the SUPPLY TAPE GUIDE

Confirm that the lower edge of the tape barely touches the lower part of the SUPPLY TAPE GUIDE, without any curl or wrinkle as shown in Fig. 5-4a. If necessary, bend the neck part of the TENSION ARM in the Ⓐ or Ⓑ direction slightly until a satisfactory result is achieved.

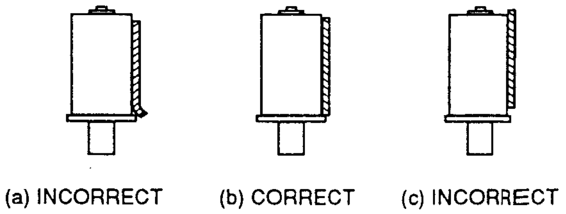


Fig. 5-4a

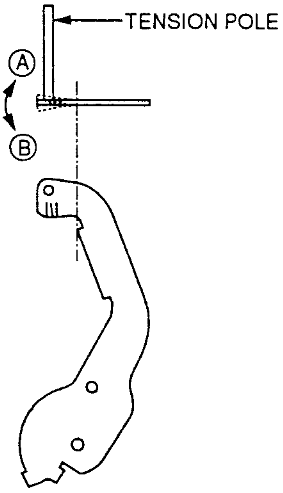


Fig. 5-4b

5-2-3. REVIEW ARM height adjustment

1) Play back the last part of an E-240 (T-160) tape and set the unit to the REVIEW mode by pressing the REW button. (Remove the tape protection cover to make the adjustment easier.)

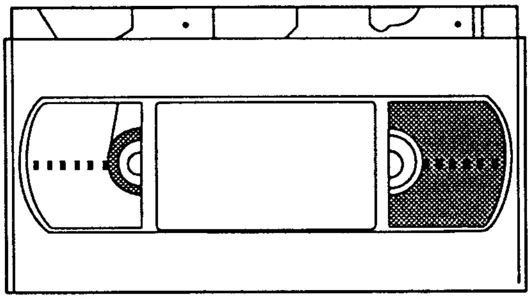


Fig. 5-5

2) Turn the REVIEW ARM height Ⓐ nut so that the edge of the tape barely touches the lower part of the TAKE-UP TAPE GUIDE, without any curl or wrinkle between the TAKE-UP TAPE GUIDE and the CAPSTAN SHAFT as shown in Fig. 5-6 to Fig. 5-8.

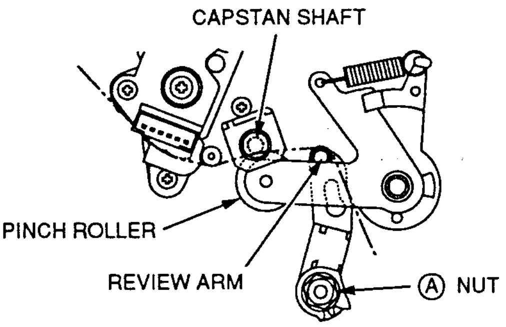
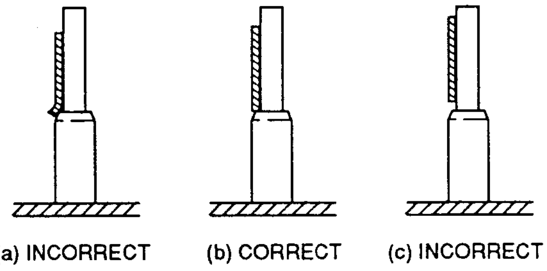


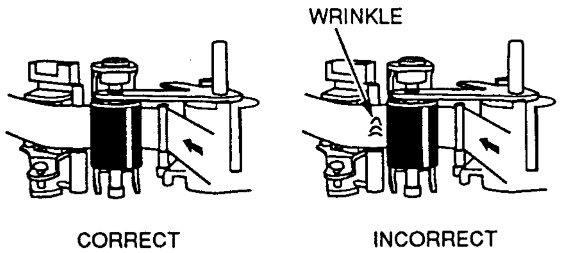
Fig. 5-6



(TAKE-UP TAPE GUIDE)

(a) INCORRECT (b) CORRECT (c) INCORRECT

Fig. 5-7

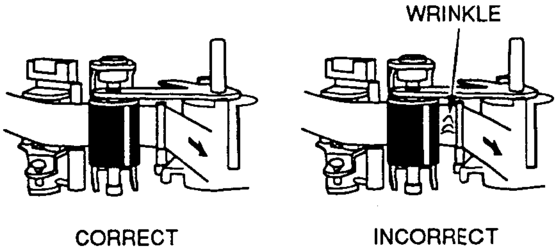


CORRECT INCORRECT

Fig. 5-8

3) Play back the last part of an E-240 (T-160) tape and this time set the unit to the CUE mode by pressing the F. FWD button.

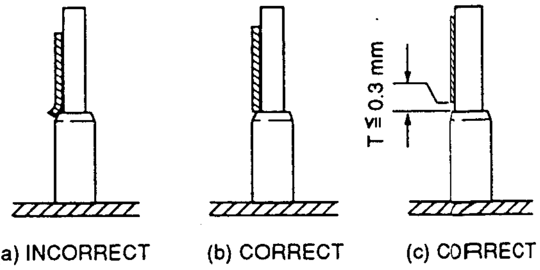
4) Confirm there is no curl or wrinkle near the REVIEW ARM's guide. If curl or wrinkle of the tape occurs, slightly turn the Ⓐ nut (Shown in Fig. 5-6) until it disappears.



CORRECT INCORRECT

Fig. 5-9

5) Set the unit to the REVIEW mode again. Then confirm that there is no curl or wrinkle near the TAKE-UP TAPE GUIDE. (A small gap may appear after this adjustment, but this is allowable.)



(a) INCORRECT (b) CORRECT (c) CORRECT

Fig. 5-10

NOTE :

1. If the results are not satisfactory, repeat steps 2) to 5).
2. Always play an undamaged tape to obtain satisfactory adjustment.
3. Because an E-240 (T-160) tape can be damaged easily, due of its thinness, a pre-adjustment with an E-180 (T-120) tape is recommended.

5-2-4. LOADING LEADER height adjustments

1) Slightly loosen the set screw at the lower part of the LOADING LEADERs (L), (R) so that the LOADING LEADER can be adjusted with reasonable tightness. (Refer to Fig. 5-11.)

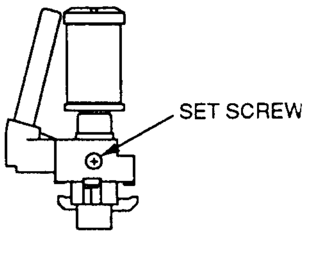


Fig. 5-11

2) Play back the reference tape TF-530RFS (AT-751775).
3) Connect an oscilloscope's CH-1 to the TP1 (ENVE) on the PRE AMP & Hi-Fi PCB and CH-2 to the TP2 (V-SWP) for triggering.
4) Turn the LOADING LEADER heads with a flat head(–) screw driver to obtain a flat RF envelope as the ideal envelope, as shown in Fig. 5-12.
5) After adjustment is completed, tighten the loading leader set screws.

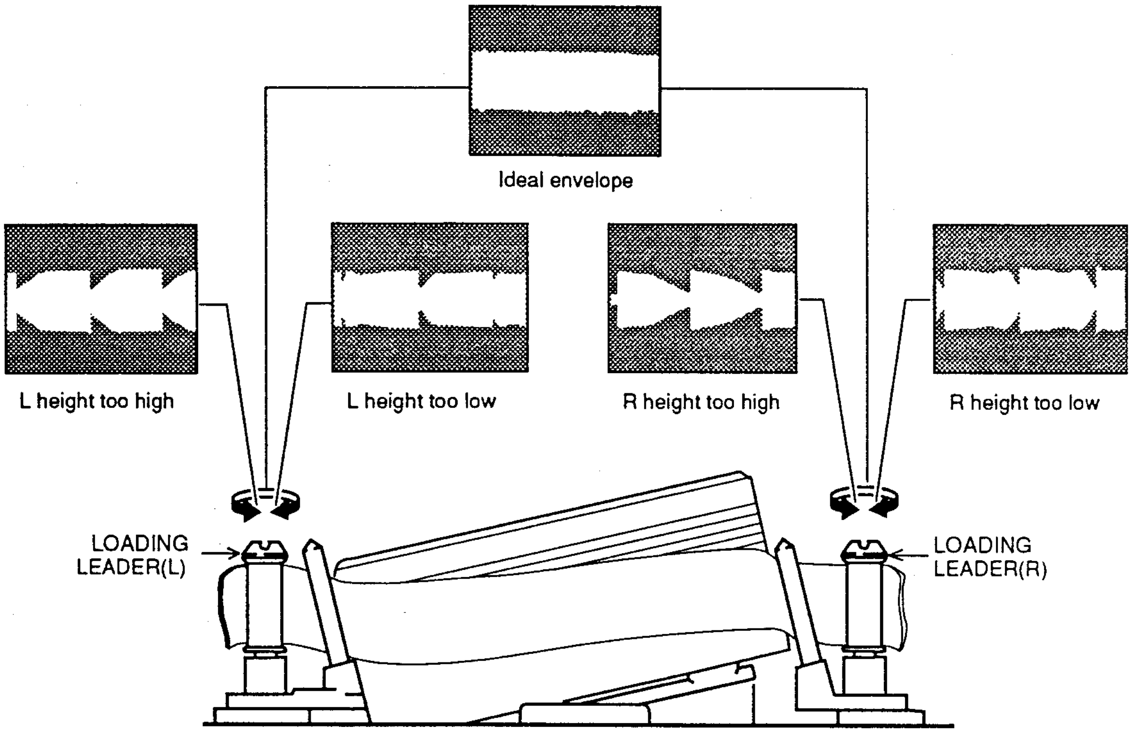

Ideal envelope
L height too high
L height too low
R height too high
R height too low
LOADING LEADER(L)
LOADING LEADER(R)

Fig. 5-12

5-3. A/C HEAD POSITION ADJUSTMENT

5-3-1. Azimuth adjustment

1) Connect an AC voltmeter or an oscilloscope to the AUDIO OUT terminal on the rear panel.
2) Play back the reference tape TF-530RFS (AT-751775).
3) Press the "AUDIO MONITOR" button on the remote control unit repeatedly and choose the linear (normal) audio playback.
4) Adjust the Ⓑ screw to obtain the maximum audio output.

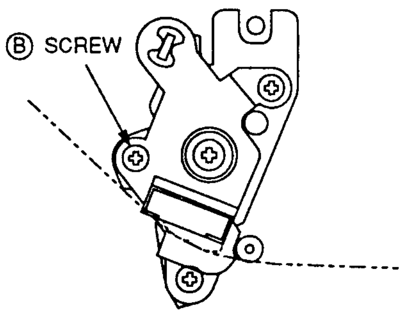


Fig. 5-13

5-3-2. Height adjustment

1) Play back test tape TF-526HH (AT-751788).
2) Connect an oscilloscope to the AUDIO OUT terminal on the rear panel .
3) Slightly turn the Ⓒ screw so that the output level is between 30 ~ 80 mVp-p.

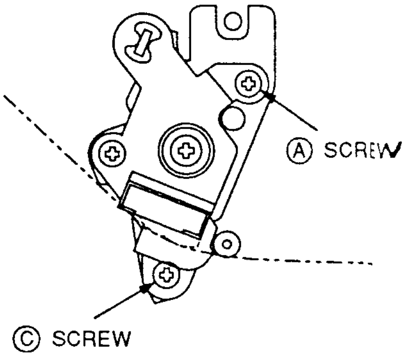

Ⓐ SCREW
Ⓒ SCREW

Fig. 5-14

4) Slightly turn the Ⓐ screw until the tape edge barely touches the lower part of the TAKE-UP TAPE GUIDE without any curl or wrinkle as shown in Fig. 5-3.

5) Adjust the head azimuth again. (Turning the Ⓒ screw, or Ⓐ screw, will cause head azimuth mis-alignment. Refer to 5-3-1. Azimuth adjustment.)

6) Confirm whether the output level is still between 30 ~ 80 mVp-p or not. If the result is not satisfactory, repeat steps 3) to 5).

5-3-3. Phase adjustment

1) Connect an oscilloscope's CH-1 to the TP1 (ENVE) on the PRE AMP & Hi-Fi PCB and CH-2 to the TP2 (V-SWP) for triggering.

2) Play back reference tape TF-530RFS (AT-751775).

3) Press the ">" or "<" TRACKING button on the remote control unit until the "X" mark can be seen in the center position of the tracking range on the TV screen as shown in Fig. 5-15.

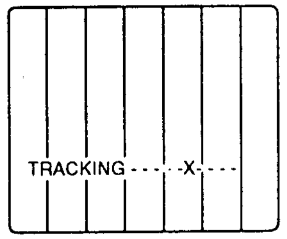


Fig. 5-15

4) Loosen the Ⓓ screw slightly so that the A/C HEAD BASE can be moved with reasonable tightness.

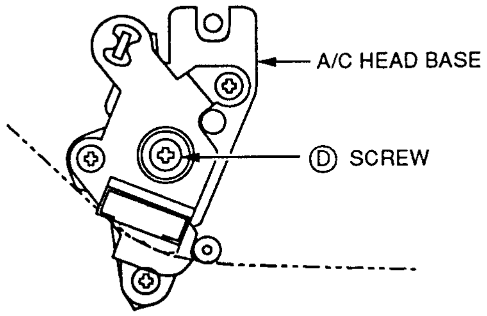


Fig. 5-16

5) Insert a philips type screwdriver into the A/C HEAD BASE and Ⓐ hole as shown in Fig. 5-17

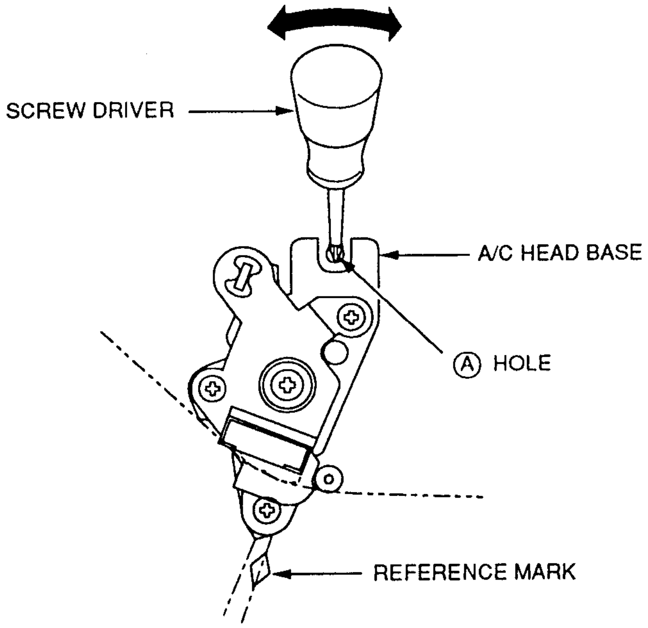


Fig. 5-17

6) Move the A/C HEAD BASE by moving a screwdriver in the direction of the arrow as shown in Fig. 5-17 to obtain the maximum RF output, then tighten the Ⓓ screw. Although there are a few points at which the RF output becomes maximum, the pointed head of the A/C HEAD BASE must be positioned to the left side of the reference mark (head drum direction).

7) Eject the tape and then re-insert it and play it back again. Confirm that the RF output is maximum after the auto tracking control has been activated. Next, press the "<" or ">" cursor button on the remote control unit alternately and confirm that the RF output is maximum at the tracking centre position. If the result is not satisfactory, repeat the adjustment steps 2) to 6). (This adjustment is very important as this affects the interchangeability of the recorded tapes.)

VI. ELECTRICAL ADJUSTMENT

Precautionary items prior to adjustments

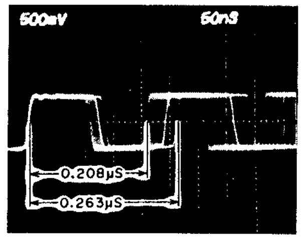
1. The colour bar generator output should be 1.0 Vp-p.
2. The video output terminal should be terminated with 75 ohms (connect dummy load or 75 ohms input TV).
3. If the IC601 (Y/C signal processor) on the MAIN PCB is replaced, adjustment (step 1 & 3 to 7) should be performed.
4. To make adjustment easier, remove the PCB HODER (2) before proceeding (refer to Fig. 4-37 on page 23).

The following test tape is required.

Test tape	Parts No.
TF-532CBS	AT-751360

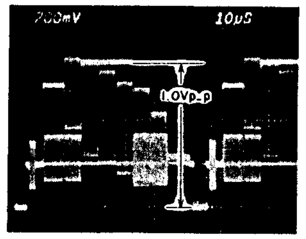
4 CARRIER SET & DEVIATION

1. "E-E", Stair step signal
2. Lead of VR608 (REC-Y) & VR601 (DEVIATION), VR602 (CARRIER),
3. • Connect an oscilloscope to the lead of the VR608 (REC FM OUT).
   ∗ Adjust VR601 and VR602 alternately until the result is satisfactory.
   ∗ VR601 (DEVIATION) :0.208 μs (4.8 MHz)
   ∗ VR602 (CARRIER) :0.263 μs (3.8 MHz)



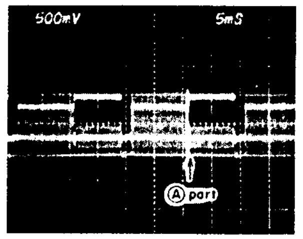
1 VIDEO E-E LEVEL

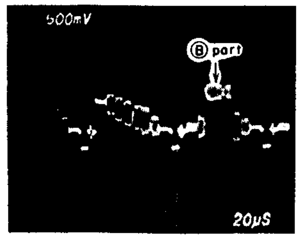
1. "E-E" (STOP mode), PAL colour bar signal
2. VIDEO OUT & VR607 (E-E LEVEL)
3. • Connect an oscilloscope to VIDEO OUT.
   ∗ 1.0 Vp-p



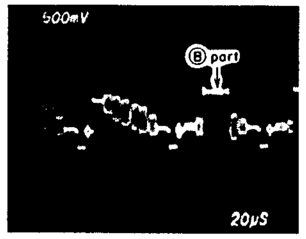
8 CDR

1. "PB", test tape TF-532CBS
2. VIDEO OUT, TP2 (SWP) & VR3 (MIX GAIN) ,VR4 (PHASE ADJ.)
3. • Connect CH-1 of an oscilloscope to VIDEO OUT and CH-2 to the TP2 on the PRE AMP & Hi-Fi PCB for triggering.
   • Set the oscilloscope to delayed scanning mode and observe the Ⓐ part (line non-correlated part).
   ∗ After the auto tracking control has been activated, adjust the VR3 and VR4 alternately so that the non-correlated chroma signal (Ⓑ part) is at its minimum level.

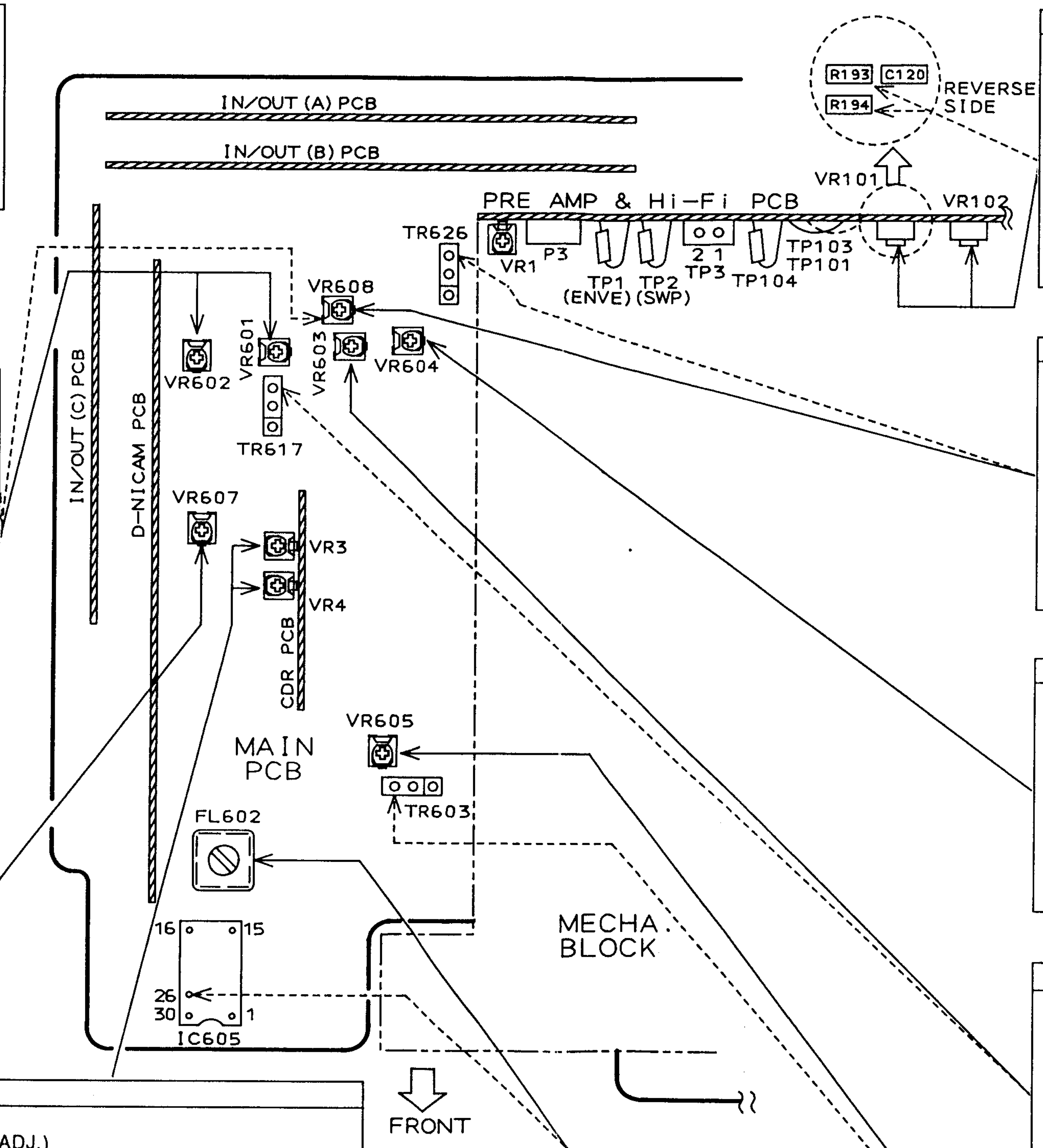




INCORRECT



CORRECT



2 IMS AFC

1. "E-E", PAL colour bar signal
2. IC605 ㉖ pin & FL602
3. • Connect a digital DC voltmeter to the IC605 ㉖ pin.
   ∗ Adjust FL602 so that the meter registers 2.5 V.

STEP	ADJUSTMENT ITEM
1. MODE and INPUT SIGNAL/TEST TAPE	
2. TEST POINT and ADJ part	
3. REMARKS (•) & RESULT (∗)	

ADJ.part →

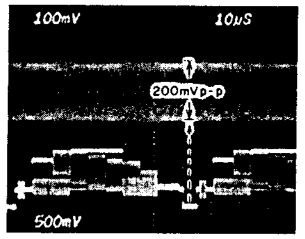
Test point ⇢

9 Hi-Fi CARRIER FREQUENCY

1. "E-E", no signal input
2. R193 (1.4 MHz), R194 (1.8 MHz) & VR101 (L-CH fo), VR102 (R-CH fo)
3. • Connect a frequency counter to the lead of R193 on the PRE AMP & Hi-Fi PCB.
   ∗ Adjust the VR101 so that the frequency counter registers 1.4 MHz ± 50 Hz.
   • Connect a frequency counter to the lead of R194.
   ∗ Adjust the VR102 so that the frequency counter registers 1.8 MHz ± 50 Hz.

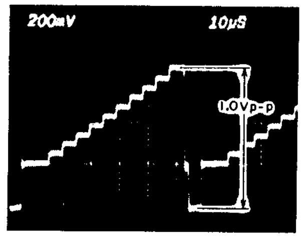
5 Y REC CURRENT

1. "E-E", PAL colour bar signal
2. TR626 emitter (REC-Y) & VR608 (REC-Y),
3. • Connect an oscilloscope to the TR626 emitter on the MAIN PCB.
   ∗ Adjust VR608 so that the Y REC current becomes 200 mVp-p at the sync signal area.



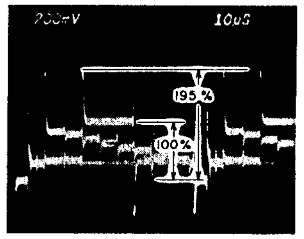
7 VIDEO PB LEVEL

1. "REC"→ "PB", stair step signal
2. VIDEO OUT & VR604 (PB LEVEL)
3. • Connect an oscilloscope to VIDEO OUT.
   • Make a recording on a blank tape, then play it back.
   ∗ Adjust VR604 so that the PB level becomes 1.0 Vp-p.



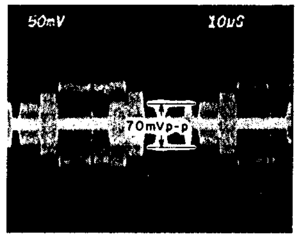
3 WHITE CLIP

1. "E-E", Stair step signal
2. TR617(EMITTER) & VR603 (WHITE CLIP)
3. • Connect an oscilloscope to the emitter of TR617.
   ∗ Adjust VR603 so that the white clip level is 195 % of the video level (the level from sync tip to white 100%).



6 CHROMA REC CURRENT

1. "E-E", PAL colour bar signal
2. TR603 emitter & VR605 (REC-CHROMA)
3. • Connect an oscilloscope to the TR603 emitter.
   • Set the tape speed to "SP mode".
   ∗ Adjust VR605 on the MAIN PCB so that the burst signal level becomes 70 ± 5 mVp-p.



1. RECOMMENDED SPARE PARTS

We suggest you to stock the following Recommended Spare Part items listed below since they can cover most of the routine service.

Ref. No.	Part No.	Description
1	AV-425251J	REMOCON RC-W458E [EK]
2	AV-425252J	REMOCON RC-W478E [EOH-VD]
3	AV-425253J	REMOCON RC-W478G [EOG]
4	AV-425256J	REMOCON RC-W678E [EO,EOH-DN]
5	AV-425518J	REMOCON RC-W688E [EA]
6	BB-421845N36	MECHA DECK G405EA
7	BL-424913N04	ARM LOADING BLK G204EA
8	BL-420054N2	ARM PINCH ROLLER PART
9	BM-424801J	GEAR MOTOR PART
10	BM-421746N	MOTOR PART
11	BM-419269N	MOTOR SCV-0602A
12	BM-419324J1	MOTOR SDV-0302A
13	* BT-422117N	TRANS POW V1190 EOG
14	BV-424919N04	CASSETTE LOAD BLK G204EA
15	BV-424907N00	HOLDER GEAR BLK G405EA
16	BV-424914N00	LEADER(S) BLK G204EA
17	BV-424915N01	LEADER(T) BLK G204EA
18	BV-V1182A410E	LOWER DRUM BLK G2100EA-D
19	BV-403410J	RF CONVERTER MDLK6B733A EK [EK]
20	BV-403409J	RF CONVERTER MDLK6D755A EO [EXCEPT EA,EK,EOH-DN[E]]
21	BV-387610J1	RF CONVERTER YAA21-0809G EA [EA]
22	BV-V1182A420G	UPPER DRUM BLK G2100EA-D
23	BV-422570J	VIF UNIT AHX EA [EA]
24	BV-422571J	VIF UNIT AHX EK [EK]
25	BV-422574J	VIF UNIT AHX EOG [EO]
26	BV-422576J	VIF UNIT AHX EOHD [EOH-VD]
27	BV-422575J	VIF UNIT AHX EOHN [EOH-DN]
28	BV-427235J	VIF UNIT AHX TEK EOG [EOG]
29	* EC-425398J	C DOUBLE FYD0H473Z 5.5DC
30	ED-390012J	D LED GL4800 INFRARED
31	ED-425270J	D LED GL5ED44 RED,GREEN
32	ED-422251J	D LED GL528VTB INFRARED T05
33	ED-422243N	D SCHOT.AK03WK T05
34	ED-428020J	D SCHOTTKY CHIP MA716 TXT08E
35	ED-422244J	D SCHOTTKY RK34LF-B2 S12
36	ED-422462J	D SCHOTTKY RK49 015-302 S15
37	ED-410157J	D SILICON CHIP MA152WA [EA,EOG,EK]
38	ED-419028J	D SILICON CHIP MA152WK TXT08E
39	ED-427158J	D SILICON CHIP MA153A TXT08E
40	* ED-418976N	D SILICON EG01CW T05 1000/0.5A
41	ED-425207J	D SILICON ERA18-02 T26
42	ED-307572	D SILICON H 1SS131
43	* ED-511907	D SILICON 1N4002 100/1.0A
44	* ED-422125J	D SILICON 1N4006 T26 800/1.0A
45	ED-397233J	D ZENER H HZS5C3
46	ED-387919J	D ZENER H HZS6A1L
47	ED-367502	D ZENER H HZS9A1L [EOG,EOH]
48	ED-397614J	D ZENER H HZS9A3L T26
49	ED-425442J	D ZENER H MTZJ13A T26
50	ED-425712J	D ZENER H MTZJ18B T26
51	* ED-422420J	D ZENER H MTZJ20C T26
52	ED-418996J	D ZENER H MTZJ3.0A T26
53	ED-418722J	D ZENER H MTZJ4.3A T26
54	* ED-422519J	D ZENER H MTZJ4.3B T26
55	ED-405604J	D ZENER H MTZJ4.3C T26
56	ED-404221J	D ZENER H MTZJ6.2B T26
57	ED-427218J	D ZENER H MTZJ6.2C T26
58	EE-412395J	TV TUNER ENV-578C9F1 EOH [EOH]
59	EE-416524J1	TV TUNER TEKE4-034B EOG [EOG]
60	EE-387607J1	TV TUNER TERB1-008B EK [EK]
61	EE-387604J3	TV TUNER TERE1-007D EOG [EO]
62	EE-387600J2	TV TUNER TERS1-002C EA [EA]
63	* EF-601964	FUSE SET T 250V 1.60A
64	EI-410125J	IC V53C464AP-80
65	EI-425189J	IC AN3317K
66	EI-416607J	IC AN3386NK-A
67	EI-422151J	IC AN3558FBS
68	EI-425194J	IC AN3963NFBPA
69	* EI-422131J	IC AN7809F
70	EI-373981J1	IC BA10393N
71	EI-386468J	IC BA3308
72	EI-389644J	IC BA403
73	EI-364896	IC BA6138
74	EI-386393J	IC BA7605N
75	EI-385995J	IC BA7755A
76	EI-356457	IC BU4013B
77	EI-414885J	IC CF72306
78	EI-414884J	IC CF72307
79	EI-422365J	IC CXA1645M
80	EI-425537J	IC LA6358NM
81	EI-729997J	IC LA7575 [EXCEPT EK,EOH-DN]
82	EI-733547J	IC LA7577 [EK,EOH-DN]
83	EI-403233J	IC LB1641
84	EI-419157J	IC LC74760-9044
85	EI-394856J	IC LC8992
86	EI-389622J	IC L5631
87	EI-422375J	IC MC14013BFR2
88	EI-408961J	IC MM1031XS [EXCEPT EA]
89	EI-416647J	IC MM1111XS [EOG]
90	EI-416646J	IC MM1113XS
91	EI-425325J1	IC M37770M4H-165FP ATXSYP2
92	EI-425719J1	IC M38174M8-260FP ATXOPP3
93	EI-422218J	IC M51494L
94	EI-425420J	IC M52364P
95	* EI-418723J	IC NJM4558DX
96	EI-400756J	IC NJM4558L-B
97	EI-422090J	IC SAA5233P [EOH-DN[Y1]]
98	EI-422382J	IC SAA5233T
99	EI-422128N	IC TA76431S T05
100	EI-332259	IC TC4052BP
101	EI-200573	IC TC4053BP
102	EI-310036	IC TC4066BP [EOG]
103	EI-425190J	IC TDA8204
104	EI-425191J	IC TDA8205
105	EI-416611J	IC TDA8417
106	EI-418863J2	IC UPD78014CW-072 AXVPT3
107	EI-416691J	IC XC61AC3002TH T05
108	EI-425668J	IC 24LC02B/SN
109	EI-425666J	IC 24LC08B/SN
110	EI-414889J	OSC CE CST10.0MTW-TF01 T05
111	EI-405327J	OSC CE CST6.00MGW 6.000MHZ
112	EI-425184J	OSC X'TALAPS-1007 11.648MHZ
113	EI-425240J	OSC X'TALAPS-1011A 16.000MHZ
114	EI-416872J	OSC X'TALAPS1004A 17.734475 MH
115	EI-422092J	OSC X'TALAPS1008 3RD27.000MHZ [EOH-DN[Y1]]
116	EI-422373J	OSC X'TALAPS1008B3RDH27.00 MHZ
117	EI-422503J	OSC X'TALAPS1010B 13.875MHZ
118	EI-425185J	OSC X'TALASP-1006 10.000MHZ
119	EI-368825M	OSC X'TAL C-002RX 32.768KHZ

VII. PARTS LIST

ATTENTION

1. When placing an order for parts, be sure to list the Part No., Model No. and the description of earch part. Otherwise, the non-delivery of the part or the delivery of a wrong part may result.
2. Please make sure that Part No. is correct when ordering. If not, a part different from the one you ordered may be delivered.
3. Since the parts shown in Parts List or Preliminary Service Manual may have been the subject of changes, please use this Parts List for all future reference.

HOW TO USE THIS PARTS LIST

1. This Parts List lists those parts which are considered necessary for repairs. Other common parts, such as resistors and capacitors, are listed in the "Common List for Service Parts" from which these parts should be selected and stocked.
2. The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
4. How to read the Parts List.

a) Mechanism Block

2. HEAD BASE BLOCK

Ref. No.	Part. No.	Description
1	BH-T2023A320A	HEAD BASE BLOCK
2	HP-H2206A010A	HEAD R/P PR4-8FU C
3	ZS-477876	PAN20x03STL CMT
4	ZS-536488	BID20x08STL CMT
5	ZG-402895	SP CS ANGLE ADJUST

SP (Service Parts) Classification

This number corresponds with the individual parts index number in the figure.

b) PC Board

2. MAIN PC BOARD

Ref. No.	Part. No.	Description
IC1	EI-324536	IC HD14049BP
IC2	EI-336801	IC MB8841-564M
C1A	EC-338399	C MMY V 223M 250AC [U,E,B,S]
C1B	EC-350949	C MMY V 223M 250DC [J]
C1C	EC-338397	C MMY V 223M 125AC [C,A]
X1	EI-318384	OSC X'TAL NC-18C

Symbols for primary destination

[A] : AAL (U.S.A) [S] : SAA (Australia)
[B] : BEAB (England) [U] : U/T (Universal Area)
[C] : CSA (Canada)
[E] : CEE (Europe) [V] : VDE (Germany)
[J] : JPN (Japan) [Y] : Custom

SP (Service Parts) Classification

These reference symbols correspond with component symbols in the Schematic Diagrams.

The available PC Board Blocks are listed separately.

5. When Part No. is known, Parts Index at end of Parts List can be used to locate where that part is shown in Parts List by its Reference No. listed at right of Part No.

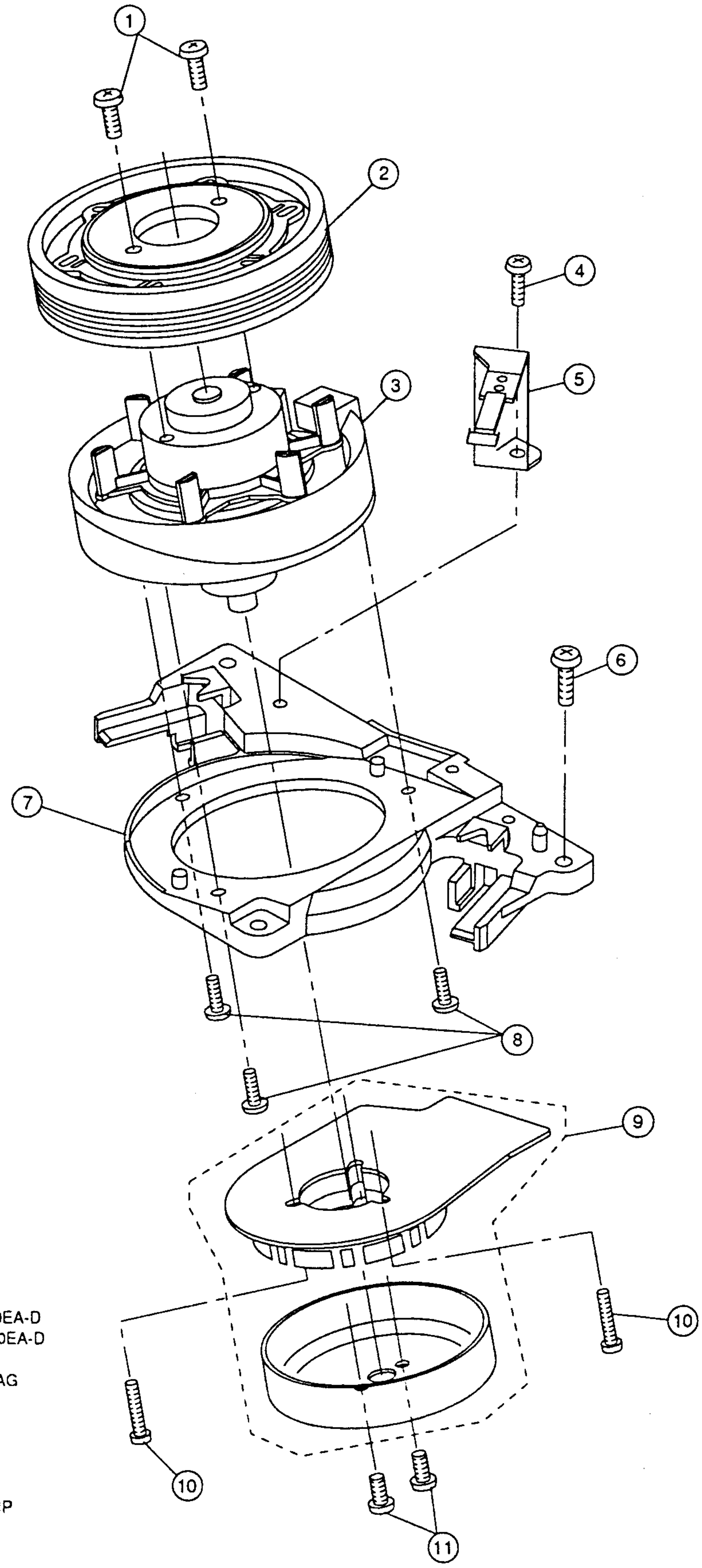
WARNING

⚠ (✱) INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS.

AVERTISSEMENT

⚠ (✱) IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCUTITÉDE L'APPAREIL, NE REMPLACER QUE DES PIÉCES RECOMMANDEES PAR LÉ FABRICANT.

HEAD DRUM BLOCK



2. HEAD DRUM BLOCK

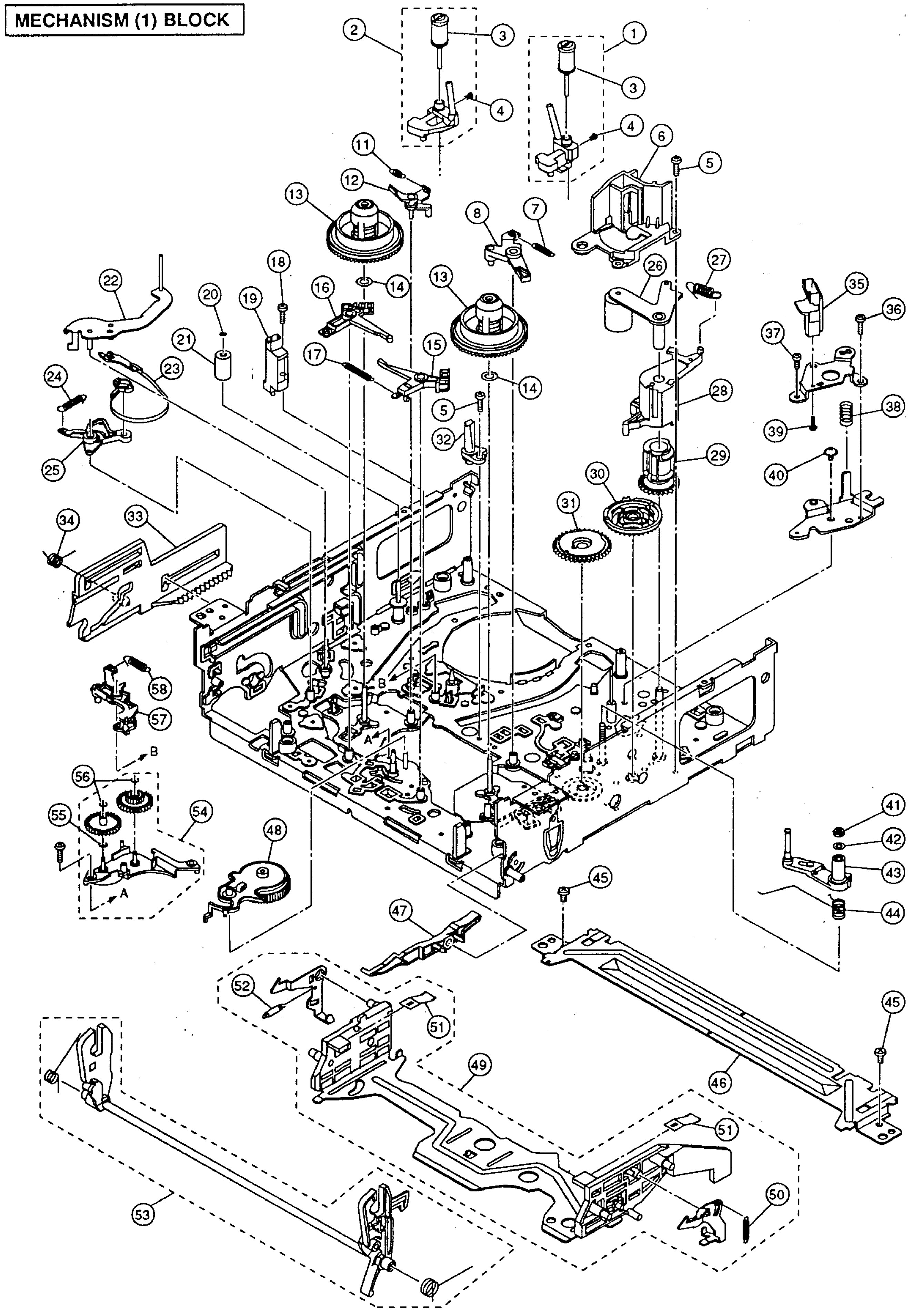
Ref. No.	Part No.	Description
1	ZS-321298	BID30X08STL CMT
2	BV-V1182A420G	UPPER DRUM BLK G2100EA-D
3	BV-V1182A410E	LOWER DRUM BLK G2100EA-D
4	ZS-427136J	ST BID30X05STL CMT
5	VT-418700J1	EARTH BRUSH (2) PART AG
6	ZS-336714	ST BID30X12STL CMT
7	MA-420191J2	CHASSIS DRUM
8	ZS-563444	BID26X08STL CMT
9	BM-419324J1	MOTOR SDV-0302A
10	ZS-467796	PAN26X12STL CMT
11	ZS-425694J	PAN30X06STL CMT S-GRIP

NOTE :
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

Ref. No.	Part No.	Description
120	EI-422510J	OSC X'TAL HC-49/U 4433.619KHZ
121	EM-425282J	IND FL FV638G CHARACTER [FL1]
122	*ER-307565	R FUSE H S10 ERD2FC 1/4W 6R8J
123	*ER-408829J	R FUSE V T05 RF25SCVTP1/4WR11K
124	*ER-400728J	R FUSE V T05 RF25SCVTP1/4WR12K
125	*ER-397385J	R FUSE V T05 RF25SCVTP1/4WR20K
126	*ER-418648J	R FUSE V T05 RF25SCVTP1/4WR24K
127	*ER-408963J	R FUSE V T05 RF25SCVTP1/4WR33K
128	*ER-400729J	R FUSE V T05 RF25SCVTP1/4WR47K
129	ES-391710J	SW LEAF SPPB51 01-1 NO [SW1]
130	ES-392384J	SW LEAF SPPB62 01-1 [SW301][SW302]
131	ES-422247J1	SW MICRO MPU10181MLB0
132	ES-419326N1	SW MODE SELECT MMS00202ZMB0
133	ES-411687J	SW TACT EVQ-PAE05R
134	ET-414585J	DETECTOR GP1U571X
135	*ET-422113J	PHOTO COUPLER PS2561-1-V
136	ET-422464J	TR C.2SD2118 Q,R,S FPTLT16E
137	ET-427131J	TR CHIP DTA115TK
138	ET-731437J	TR CHIP DTC114EK [EO,EOG]
139	ET-421984J	TR CHIP UN211D TXT08E
140	ET-421977J	TR CHIP UN2113 TXT08E
141	ET-421979J	TR CHIP UN2115 R,S TXT08E
142	ET-421999J	TR CHIP UN221D TXT08E
143	ET-422000J	TR CHIP UN221E TXT08E [EA,EOG,EK]
144	ET-422003J	TR CHIP UN221L TXT08E
145	ET-421990J	TR CHIP UN2211 TXT08E
146	ET-421991J	TR CHIP UN2212 TXT08E
147	ET-414836J	TR CHIP UN2213 TXT08E [EA]
148	ET-421993J	TR CHIP UN2215 R,S TXT08E
149	ET-370818	TR CHIP 2SA1235 [EK,EOH-DN]
150	ET-416932J	TR CHIP 2SB709A R,S TXT08E [EA]
151	ET-725820J	TR CHIP 2SC2735J
152	ET-370819	TR CHIP 2SC3052
153	ET-416933J	TR CHIP 2SD601A R,S TXT08E
154	ET-415140J	TR DTA115TS T05
155	ET-373391	TR DTC143ZS
156	ET-390010J	TR PHOTO PT4800
157	ET-390009J	TR PHOTO PT493F
158	ET-421934J	TR UN411D T05
159	ET-419708J	TR UN4111 T05 [EA,EK,EOG]
160	ET-419710J	TR UN4113 T05
161	ET-419712J	TR UN4115 R,S T05
162	ET-422254J	TR UN4117 R,S T05
163	ET-364040	TR UN421D
164	ET-421952J	TR UN421L T05
165	ET-360400	TR UN4210 [EOG,EOH]
166	ET-422031J	TR UN4210 R,S T05 [EXCEPT EA]
167	ET-421939J	TR UN4211 T05
168	ET-421941J	TR UN4213 T05 [EXCEPT EK]
169	ET-421943J	TR UN4214 T05
170	ET-421944J	TR UN4215 R,S T05
171	ET-421945J	TR UN4216 R,S T05
172	ET-353899	TR 2SA1317 S,T,U
173	*ET-404498J	TR 2SB1306 Q,R T05
174	*ET-422154J	TR 2SB1426 Q,R T05
175	ET-419706J	TR 2SB1434 R,S T05
176	ET-414816J	TR 2SC2668 Y T05
177	ET-397160J	TR 2SC3330 R,S,T,U,V [EXCEPT EK]
178	*ET-422118J	TR 2SC4304 O,Y
179	ET-425262J	TR 2SD1758 Q,R (CPT F5)
180	*ET-422129J	TR 2SD2132 U,V T05
181	*ET-422511J	TR 2SD2375 P
182	*EX-405691J	THERMISTOR NTH5D332KA
183	*EX-412521J	THERMISTOR 911P83E101NH07 T05

Ref. No.	Part No.	Description
184	HE-422168J	HEAD E HVFHF0032A
185	HR-416732J	HEAD COMBO HVMZA1161A
186	MB-420053N	BELT CAPSTAN
187	MI-420023N2	ARM IDLER PART
188	MI-420145N	DISK CLUCH(2)PART
189	MI-420037N	DISK COUPLING
190	ML-420033N1	ARM COUPLING
191	ML-420170N	ARM LID OPENER
192	ML-420097N1	ARM LOADING BRAKE
193	ML-420068N1	ARM REVIEW PART
194	ML-420006N1	ARM TENSION PART
195	ML-420126N1	CAPSTAN BRAKE PART
196	ML-420099N1	LEVER M BRAKE
197	ML-420061N2	LEVER PINCH
198	ML-420133N	LEVER REC-S
199	ML-420416N2	LEVER TENSION(1)PART
200	ML-420138N1	LEVER WINDER PART (SG)
201	ML-420086N1	MAIN BRAKE(S)PART
202	ML-420089N1	MAIN BRAKE(T)PART
203	ML-420092N1	REVIEW BRAKE PART
204	ML-420110N1	SLIDER PINCH
205	ML-420100N1	SLIDER TRIGGER
206	MR-420109N	HOLDER THRUST WORM
207	MR-420106N	PULLEY TRIGGER
208	MR-420022N	ROLLER IMPEDANCE
209	MT-424632N1	DISK(2) PART
210	MZ-420064N	GEAR CAM HELICAL
211	MZ-420122N	GEAR CAM MAIN
212	MZ-420328N2	GEAR CAM PINCH(2)
213	MZ-420035N	GEAR COUPLING
214	MZ-420124N1	GEAR FRONT LOADING
215	MZ-420067N	GEAR PINCH
216	MZ-424917N01	GEAR TOGGLE (S) BLK G204EA
217	MZ-424916N02	GEAR TOGGLE (T) BLK G204EA
218	MZ-420123N	GEAR WORM WHEEL
219	MZ-420132N1	PRISM LED
220	MZ-420016N1	TENSION BAND PART
221	ZG-420036N	SP PUSH COUPLING
222	ZG-420105N	SP TRIGGER

MECHANISM (1) BLOCK



3. MECHANISM (1) BLOCK

Ref. No.	Part No.	Description
1	BV-424915N01	LEADER(T) BLK G204EA
2	BV-424914N01	LEADER(S) BLK G204EA
3	VT-387394J1	GUIDE ROLLER D8 PART
4	ZS-418616J	PAN20X2.8STL CMT PS1 LEADER
5	ZS-383761J	ST BID26X06STL CMT
6	MZ-420065N2	HOLDER PINCH
7	ZG-420095N	SP PULL REVIEW BRAKE
8	ML-420092N1	REVIEW BRAKE PART
11	ZG-420098N	SP PULL LOADING BRAKE
12	ML-420097N1	ARM LOADING BRAKE
13	MT-424632N1	DISK(2) PART
14	ZW-424667N	REEL WASHER (SG)
15	ML-420089N1	MAIN BRAKE(T)PART
16	ML-420086N1	MAIN BRAKE(S)PART
17	ZG-420091N	SP PULL MAIN BRAKE
18	ZS-389950J	PT BID26X10STL CMT
19	HE-422168J	HEAD E HVFHF0032A
20	ZW-395919J	SLIT W16X035X025 PSL
21	MR-420022N	ROLLER IMPEDANCE
22	ML-420006N1	ARM TENSION PART
23	MZ-420016N1	TENSION BAND PART
24	ZG-420015N1	SP PULL TENSION(1)
25	ML-420416N2	LEVER TENSION(1)PART
26	BL-420054N2	ARM PINCH ROLLER PART
27	ZG-420062N	SP PULL PINCH
28	ML-420061N2	LEVER PINCH
29	MZ-420064N	GEAR CAM HELICAL
30	MZ-420328N2	GEAR CAM PINCH(2)
31	MZ-420067N	GEAR PINCH
32	MZ-420132N1	PRISM LED
33	ML-420168N1	SLIDER FRONT LOADING
34	ZG-420169N1	SP TORSION SLIDER
35	HR-416732J1	HEAD COMBO HVMZA1161A
36	ZS-550708	PAN26X08STL NI3
37	ZS-422170J	PAN26X07STL CMT CP
38	ZG-424556J	SP PUSH A/C(2)
39	ZS-418480J	PAN20X2.2STL BZN PS1
40	ZS-362533	ST PAN30X05STL CMT C080
41	ZW-350839	N30 NYLON
42	ZW-324417	PW31X060X050PSL
43	ML-420068N1	ARM REVIEW PART
44	ZG-420071N1	SP TORSION REVIEW
45	ZS-358936	ST BID30X06STL CMT
46	MZ-420172N	PLATE UPPER
47	ML-420170N	ARM LID OPENER
48	MI-420023N1	ARM IDLER PART
49	BV-424919N04	CASSETTE LOAD BLK G204EA
50	ZG-420167N	SP PULL DUMPER(T)
51	ZG-420162N	SP PLATE UPPER
52	ZG-420166N	SP PULL DUMPER(S)
53	BL-424913N04	ARM LOADING BLK G204EA
54	BV-424907N00	HOLDER GEAR BLK G405EA
55	ZW-418619J	PW16X035X025PSL
56	ZW-418855J	SLIT W1.25X040X025PSL
57	ML-420138N1	LEVER WINDER PART (SG)
58	ZG-420144N	SP PULL WINDER (SG)
59	BB-421845N38	MECHA DECK G405EA

NOTE :

Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

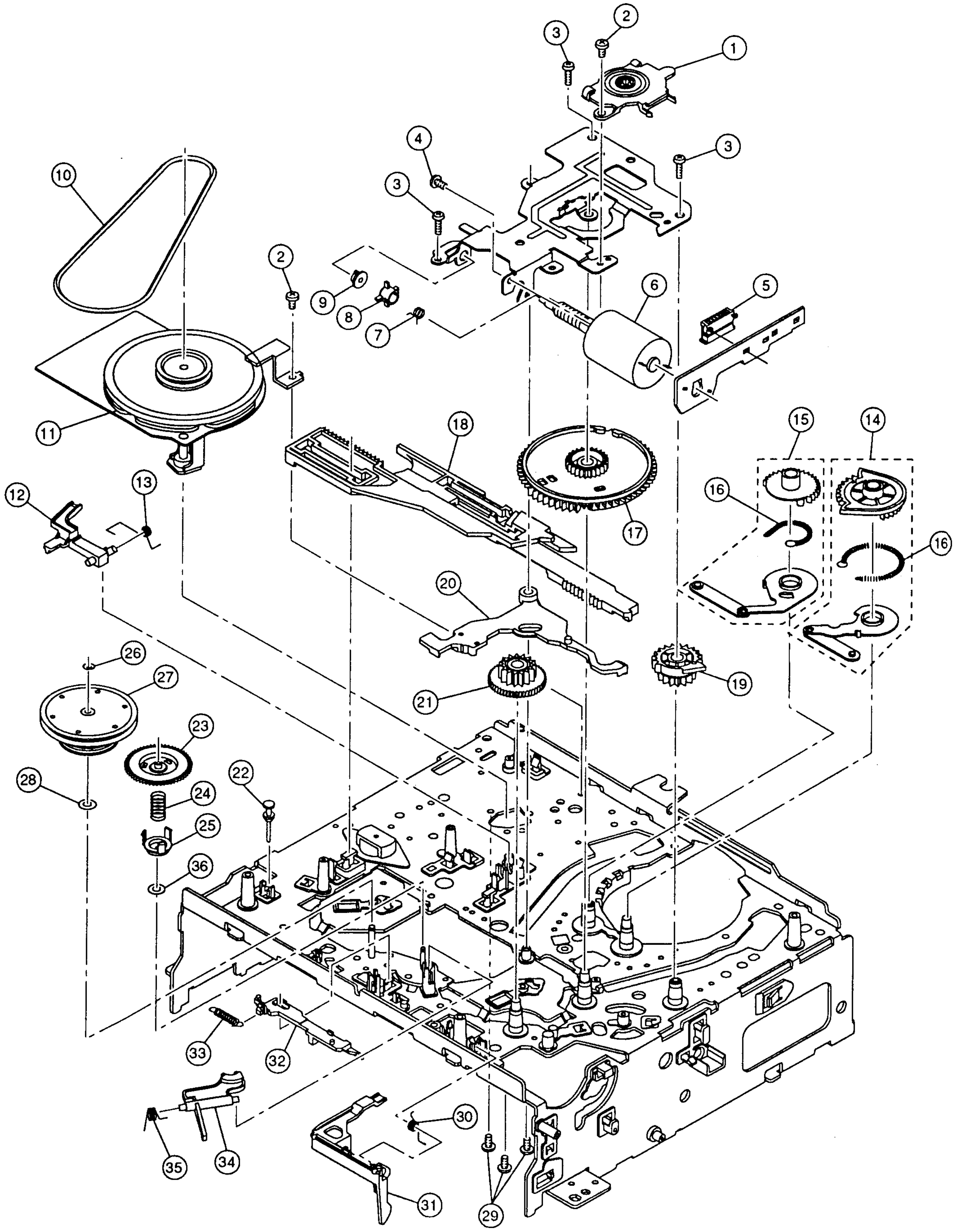
4. MECHANISM (2) BLOCK

Ref. No.	Part No.	Description
1	ES-419326N1	SW MODE SELECT MMS00202ZMB0
2	ZS-358936	ST BID30X06STL CMT
3	ZS-389950J	PT BID26X10STL CMT
4	ZS-425981	BID30X03STL CMT
5	EJ-422169J	SOCKET TKC-M07X-A1 7P
6	BM-421746N	MOTOR PART
7	ZG-420105N	SP TRIGGER
8	MR-420106N	PULLEY TRIGGER
9	MR-420109N	HOLDER THRUST WORM
10	MB-420053N	BELT CAPSTAN
11	BM-419269N	MOTOR SCV-0602A
12	ML-420126N1	CAPSTAN BRAKE PART
13	ZG-420129N1	SP TORSION C.B
14	MZ-424917N01	GEAR TOGGLE (S) BLK G204EA
15	MZ-424916N02	GEAR TOGGLE (T) BLK G204EA
16	ZG-420117N	SP PULL TOGGLE
17	MZ-420122N	GEAR CAM MAIN
18	ML-420110N1	SLIDER PINCH
19	MZ-420124N1	GEAR FRONT LOADING
20	ML-420099N1	LEVER M BRAKE
21	MZ-420123N	GEAR WORM WHEEL
22	MZ-420135N	SLIDE S-SW
23	MZ-420035N	GEAR COUPLING
24	ZG-420036N	SP PUSH COUPLING
25	MI-420037N	DISK COUPLING
26	ZW-418816J	SLIT W21X050X050PSL
27	MI-420145N	DISK CLUCH(2)PART
28	ZW-389923J	PW26X060X050PSL
29	ZS-432843	PAN26X04STL CMT
30	ZG-420134N	SP TORSION REC-S
31	ML-420133N	LEVER REC-S
32	ML-420100N1	SLIDER TRIGGER
33	ZG-420101N	SP PULL TRIGGER
34	ML-420033N1	ARM COUPLING
35	ZG-420034N2	SP TORSION COUPLING
36	ZW-321317	PW21X040X050PSL

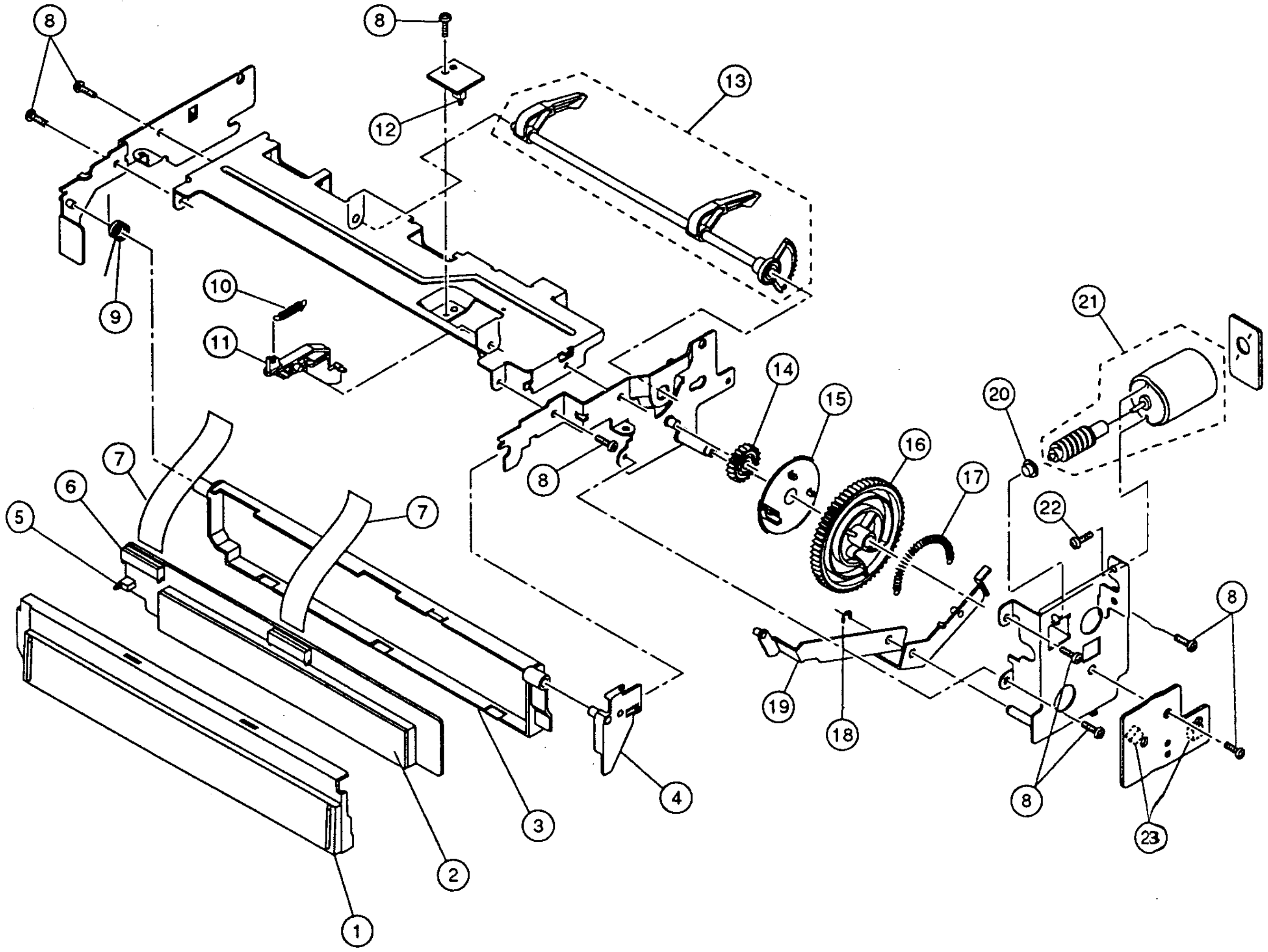
NOTE :

Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

MECHANISM (2) BLOCK



MECHANISM (3) BLOCK



5. MECHANISM (3) BLOCK

Ref. No.	Part No.	Description
1	SC-420361J	CASE MASK
2	EM-425282J	IND FL FV638G CHARACTER [FL1]
3	SZ-420362J1	HOLDER FLD
4	SZ-420366J	HOLDER MASK
5	ES-391710J	SW LEAF SPPB51 01-1 NO [SW1]
6	EJ-416651J	SOCKET 00 6216 016 100 16P [P49][P50]
7	EW-425286J	CORD FFC BD SML2CD L130 16P
8	ZS-358936	ST BID30X06STL CMT
9	ZG-420367J	SP TORSION MASK
10	ZG-420370J1	SP PULL STOPPER
11	ML-420368J2	ARM STOPPER
12	ES-391710J	SW LEAF SPPB51 01-1 NO [SW101]
13	MS-420338J	SHAFT ARM PART
14	MZ-420348J	GEAR REDUCTION
15	MZ-420346J	GEAR SLIDE
16	MZ-420345J	GEAR CAM
17	ZG-420347J	SP PULL GEAR
18	ZW-410051	RETAINING RING E250SUP CMT
19	ML-420363J	ARM MASK PART
20	MR-387406J	HOLDER THRUST WORM
21	BM-424801J	GEAR MOTOR PART
22	ZS-425981	BID30X03STL CMT
23	ES-392384J	SW LEAF SPPB62 01-1 [SW301][SW302]

NOTE :

Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

6. P.C. BOARD BLOCK

Ref. No.	Part No.	Description
1-A	BA-V1196A600A	PC(#) MAIN BLK G2100EA-D
1-B	BA-V1196Q600C	FR PC(#) MAIN BLK G2200EK-VN
1-C	BA-V1196Q600E	FR PC(#) MAIN BLK G2100EO-D
1-D	BA-V1196Q600F	FR PC(#) MAIN BLK G2200EOG-VD
1-E	BA-V1196A600G	PC(#) MAIN BLK G2100EOH-DN(E)
1-F	BA-V1196Q600H	FR PC(#) MAIN BLK G2100EOHDNY1
1-G	BA-V1196Q600J	FR PC(#) MAIN BLK G2160EOHVDY1
2-A	BA-V1190A610G	PC(#)PRE-HIFI BLK G2100EA-D [EA,EOG]
2-B	BA-V1190Q610H	FR PC#PRE-HIFI BLK G2200EK-VN [EK]
2-C	BA-V1190Q610M	FR PC#PRE-HIFI BLK 2160EOHVDY1 [EO,EOH-VD]
2-D	BA-V1190A615A	PC(#)PRE-HIFI BLK G2100EOH-DN [EOH-DN]
3-A	BA-V1194A630G	PC(#) OPERATION BLK G2100EA-D [EA,EO,EOH-DN]
3-B	BA-V1194Q630H	FR PC#OPERATION BLK G2200EK-VN [EK,EOG,EOH-VD]
4-A	BA-V1184S500J	SG PC POWER BLK G815EOH-DN [EXCEPT EOG]
4-B	BA-V1184S500K	SG PC POWER BLK G818EOG-VD [EOG]
5-A	BA-V1190Q650A	FR PC D-NICAM BLK G715EK-N/FR [EK]
5-B	BA-V1190A650C	PC D-NICAM BLK G715EOH-DN(Y2) [EOH-DN]
6-A	BA-V1184Q680D	FR PC VPST/PDCTBLK G2200EK-VN [EK,EOH-VD]
6-B	BA-V1184Q680B	FR PC VPST/PDCTBLK G818EOG-VD [EOG]

PC(#) MAIN BLK CONSISTIS OF FOLLOWING P.C. BOARDS.

- MAIN P.C. BOARD
- TR (A) P.C. BOARD
- VIF UNIT

PC(#) PRE-HIFI BLK CONSISTIS OF FOLLOWING P.C. BOARDS.

- PREAMP AND HI-FI P.C. BOARD
- OSC P. C. BOARD

PC(#) OPERATION BLK CONSISTIS OF FOLLOWING P.C. BOARDS.

- OPERATION (A) P.C. BOARD
- TR (C) P.C. BOARD

7. MAIN P.C. BOARD

Ref. No.	Part No.	Description
D3	ED-307572	D SILICON H 1SS131
D4	ED-307572	D SILICON H 1SS131
D5	ED-307572	D SILICON H 1SS131 [EXCEPT EK]
D6	ED-307572	D SILICON H 1SS131 [EXCEPT EK]
D7	ED-307572	D SILICON H 1SS131 [EOH]
D8	ED-307572	D SILICON H 1SS131 [EOG,EOH]
D9	ED-367502	D ZENER H HZS9A1L [EOG,EOH]
D10	ED-307572	D SILICON H 1SS131 [EO,EOG]
D11	ED-307572	D SILICON H 1SS131 [EO,EOG]
D12	ED-387919J	D ZENER H HZS6A1L
D13	ED-307572	D SILICON H 1SS131
D201	ED-397233J	D ZENER H HZS5C3
D202	✱ ED-422519J	D ZENER H MTZJ4.3B T26
D203	ED-307572	D SILICON H 1SS131
D205	ED-425442J	D ZENER H MTZJ13A T26
D206	ED-307572	D SILICON H 1SS131
D207	ED-307572	D SILICON H 1SS131
D401	ED-307572	D SILICON H 1SS131
D402	ED-405604J	D ZENER H MTZJ4.3C T26
D403	ED-307572	D SILICON H 1SS131
D404	✱ ED-511907	D SILICON 1N4002 100/1.0A
D405	✱ ED-511907	D SILICON 1N4002 100/1.0A
D406	✱ ED-511907	D SILICON 1N4002 100/1.0A
D407	✱ ED-511907	D SILICON 1N4002 100/1.0A
D408	ED-422251J	D LED GL528VTB INFRARED T05
D409	ED-390012J	D LED GL4800 INFRARED
D410	ED-390012J	D LED GL4800 INFRARED
D411	ED-427218J	D ZENER H MTZJ6.2C T26
D412	ED-307572	D SILICON H 1SS131
D413	ED-307572	D SILICON H 1SS131
D601	ED-307572	D SILICON H 1SS131
D603	ED-307572	D SILICON H 1SS131 [EA,EK,EOG]
D604	ED-307572	D SILICON H 1SS131
D605	ED-307572	D SILICON H 1SS131
D606	ED-307572	D SILICON H 1SS131
D607	ED-307572	D SILICON H 1SS131
D608	ED-307572	D SILICON H 1SS131 [EK,EOG,EOH-VD]
D609	ED-307572	D SILICON H 1SS131
FL602	EO-422362J	COIL TUN 1 V1184-049B VCO
FR201	✱ ER-408829J	R FUSE V T05 RF25SCVTP1/4W R11K
FR202	✱ ER-400728J	R FUSE V T05 RF25SCVTP1/4W R12K
FR401	✱ ER-418648J	R FUSE V T05 RF25SCVTP1/4W R24K
FR403	✱ ER-400729J	R FUSE V T05 RF25SCVTP1/4W R47K
FR404	✱ ER-397385J	R FUSE V T05 RF25SCVTP1/4W R20K
IC1	EI-389622J	IC L5631
IC2	✱ EI-422131J	IC AN7809F
IC201	✱ EI-418723J	IC NJM4558DX
IC401	EI-425325J1	IC M37770M4H-165FP ATXSYP2
IC402	EI-425668J	IC 24LC02B/SN
IC403	EI-425537J	IC LA6358NM
IC404	EI-403233J	IC LB1641
IC601	EI-422151J	IC AN3558FBS
IC602	EI-394856J	IC LC8992
IC603	EI-419157J	IC LC74760-9044
IC604	EI-422090J	IC SAA5233P [EOH-DN[Y1]]
IF1-A	BV-422570J	VIF UNIT AHX EA [EA]
IF1-B	BV-422571J	VIF UNIT AHX EK [EK]
IF1-C	BV-422574J	VIF UNIT AHX EOG [EO]
IF1-D	BV-422575J	VIF UNIT AHX EOHN [EOH-DN]
IF1-E	BV-422576J	VIF UNIT AHX EOHD [EOH-VD]
IF1-F	BV-427235J	VIF UNIT AHX TEK EOG [EOG]
L1	EO-381189J	COIL FIX 1 EL0405SKI 100K
L3	EO-376860	COIL FIX 1 LF-5.0S F05 820K [EXCEPT EK]
L4	EO-381189J	COIL FIX 1 EL0405SKI 100K [EXCEPT EA,EK]
L5	EO-381189J	COIL FIX 1 EL0405SKI 100K [EA,EK]
L201	✱ EO-422134J	COIL FIX 2 PC7-330K 330K
L202	✱ EO-422134J	COIL FIX 2 PC7-330K 330K
L203	EO-422134J	COIL FIX 2 PC7-330K 330K
L402	EO-392660J	COIL FIX 1 EL0405SKI 220K
L601	EO-418521J	COIL FIX 1 LAP02TA T26 121J
L602	EO-404430J	COIL FIX 1 SPT0203SA T26 10UJ
L603	EO-410090J	COIL FIX 1 SPT0203SA T26 8R2J
L604	EO-414622J	COIL FIX 1 EL0607RA T05 101K
L605	EO-418521J	COIL FIX 1 LAP02TA T26 121J
L606	EO-414616J	COIL FIX 1 LAP02TA T26 270J

Ref. No.	Part No.	Description
L609	EO-410089J	COIL FIX 1 SPT0203SA T26 6R8J
L610	EO-345881	COIL FIX 1 EL0606SKI 101J
L611	EO-410100J	COIL FIX 1 SPT0203SA T26 560J
L612	EO-414622J	COIL FIX 1 EL0607RA T05 101K
L613	EO-410100J	COIL FIX 1 SPT0203SA T26 560J
L614	EO-410103J	COIL FIX 1 SPT0203SA T26 151J
L615	EO-410090J	COIL FIX 1 SPT0203SA T26 8R2J
L616	EO-388087J	COIL FIX 1 LF-5.0S F05 331K
L619	EO-376616	COIL FIX 1 LF-5.0S F05 221K
L620	EO-410094J	COIL FIX 1 SPT0203SA T26 180J
L621	EO-410101J	COIL FIX 1 SPT0203SA T26 680J
L623	EO-410089J	COIL FIX 1 SPT0203SA T26 6R8J
L624	EO-410091J	COIL FIX 1 SPT0203SA T26 100J
L625	EO-345876	COIL FIX 1 EL0606SKI 470J
L626	EO-412317J	COIL FIX 1 LAP02TA T26 4R7J [EOH-DN[Y1]]
L627	EO-410099J	COIL FIX 1 SPT0203SA T26 470J
L628	EO-414616J	COIL FIX 1 LAP02TA T26 270J
L630	EO-418521J	COIL FIX 1 LAP02TA T26 121J
L631	EO-410101J	COIL FIX 1 SPT0203SA T26 680J
L801	EO-410091J	COIL FIX 1 SPT0203SA T26 100J [EO,EOG,EOH-DN[E]]
MD1-A	BV-403409J	RF CONVERTER MDLK6D755A EO [EXCEPT EA,EK,EOH-DN[E]]
MD1-B	BV-387610J1	RF CONVERTER YAA21-0809G EA [EA]
MD1-C	BV-403410J	RF CONVERTER MDLK6B733A EK [EK]
MD1-D	BV-403409J	RF CONVERTER MDLK6D755A EO [EOH-DN[E]]
P401	EJ-422061J	SOCKET 00 6216 018 100 18P
P418	EJ-397357J	SOCKET HLEM13R-1 13P
P420	EJ-422178J	PLUG TKC-G08P-A1 8P
P453	EJ-422176J	PLUG TKC-M07P-B1 7P
P603	EJ-422563J	SOCKET HLEM16R-1 16P
SW401	ES-422247J1	SW MICRO MPU10181MLB0
SW402	ES-422247J1	SW MICRO MPU10181MLB0
TH201	✱ EX-412521J	THERMISTOR 911P83E101NH07 T05
TR1	ET-414836J	TR CHIP UN2213 TXT08E [EA]
TR2	ET-416932J	TR CHIP 2SB709A R,S TXT08E [EA]
TR3	ET-397160J	TR 2SC3330 R,S,T,U,V [EXCEPT EK]
TR4	ET-397160J	TR 2SC3330 R,S,T,U,V
TR6	ET-416932J	TR CHIP 2SB709A R,S TXT08E
TR7	ET-414816J	TR 2SC2668 Y T05
TR8	ET-353899	TR 2SA1317 S,T,U
TR9	ET-353899	TR 2SA1317 S,T,U [EXCEPT EK]
TR10	ET-353899	TR 2SA1317 S,T,U [EXCEPT EK]
TR11	ET-416932J	TR CHIP 2SB709A R,S TXT08E [EXCEPT EK]
TR12	ET-421941J	TR UN4213 T05 [EXCEPT EK]
TR13	ET-421941J	TR UN4213 T05 [EXCEPT EK]
TR14	ET-397160J	TR 2SC3330 R,S,T,U,V [EOG,EOH]
TR15	ET-360400	TR UN4210 [EOG,EOH]
TR16	ET-421939J	TR UN4211 T05
TR17	ET-397160J	TR 2SC3330 R,S,T,U,V
TR18	ET-397160J	TR 2SC3330 R,S,T,U,V
TR19	ET-353899	TR 2SA1317 S,T,U [EA,EK,EO]
TR20	ET-397160J	TR 2SC3330 R,S,T,U,V
TR21	ET-416932J	TR CHIP 2SB709A R,S TXT08E
TR201	ET-422464J	TR C.2SD2118 Q,R,S FPTLT16E
TR203	✱ ET-404498J	TR 2SB1306 Q,R T05
TR205	✱ ET-422154J	TR 2SB1426 Q,R T05
TR206	ET-373391	TR DTC143ZS
TR207	ET-373391	TR DTC143ZS [EXCEPT EA,EO,EOH-DN[E]]
TR209	ET-373391	TR DTC143ZS
TR210	ET-353899	TR 2SA1317 S,T,U

Ref. No.	Part No.	Description
TR401	ET-421990J	TR CHIP UN2211 TXT08E
TR402	ET-419710J	TR UN4113 T05
TR403	ET-414836J	TR CHIP UN2213 TXT08E
TR404	ET-353899	TR 2SA1317 S,T,U
TR405	ET-390009J	TR PHOTO PT493F
TR406	ET-390009J	TR PHOTO PT493F
TR407	ET-390010J	TR PHOTO PT4800
TR408	ET-390010J	TR PHOTO PT4800
TR409	ET-353899	TR 2SA1317 S,T,U
TR410	ET-421977J	TR CHIP UN2113 TXT08E
TR411	✱ ET-422154J	TR 2SB1426 Q,R T05
TR412	ET-421990J	TR CHIP UN2211 TXT08E
TR413	ET-421977J	TR CHIP UN2113 TXT08E
TR414	ET-421990J	TR CHIP UN2211 TXT08E
TR601	ET-414836J	TR CHIP UN2213 TXT08E
TR602	ET-397160J	TR 2SC3330 R,S,T,U,V [EK,EOG,EOH-VD]
TR603	ET-397160J	TR 2SC3330 R,S,T,U,V
TR604	ET-421941J	TR UN4213 T05
TR607	ET-416933J	TR CHIP 2SD601A R,S TXT08E
TR608	ET-416933J	TR CHIP 2SD601A R,S TXT08E
TR609	ET-421977J	TR CHIP UN2113 TXT08E [EXCEPT EA,EK]
TR610	ET-421939J	TR UN4211 T05 [EXCEPT EA,EK]
TR611	ET-397160J	TR 2SC3330 R,S,T,U,V
TR612	ET-419708J	TR UN4111 T05 [EA,EK,EOG]
TR617	ET-421945J	TR UN4216 R,S T05
TR618	ET-414836J	TR CHIP UN2213 TXT08E
TR619	ET-353899	TR 2SA1317 S,T,U
TR620	ET-416932J	TR CHIP 2SB709A R,S TXT08E
TR621	ET-421984J	TR CHIP UN211D TXT08E
TR622	ET-421945J	TR UN4216 R,S T05 [EXCEPT EA,EK]
TR623	ET-416933J	TR CHIP 2SD601A R,S TXT08E
TR624	ET-421999J	TR CHIP UN221D TXT08E
TR625	ET-397160J	TR 2SC3330 R,S,T,U,V
TR626	ET-397160J	TR 2SC3330 R,S,T,U,V
TR629	ET-421941J	TR UN4213 T05
TR632	ET-421939J	TR UN4211 T05 [EXCEPT EA,EK]
TR633	ET-397160J	TR 2SC3330 R,S,T,U,V
TR634	ET-414836J	TR CHIP UN2213 TXT08E
TR635	ET-421999J	TR CHIP UN221D TXT08E
TR636	ET-414836J	TR CHIP UN2213 TXT08E
TR639	ET-421941J	TR UN4213 T05 [EA,EK,EOG]
TR640	ET-353899	TR 2SA1317 S,T,U
TR642	ET-416933J	TR CHIP 2SD601A R,S TXT08E
TR643	ET-353899	TR 2SA1317 S,T,U
TR644	ET-416932J	TR CHIP 2SB709A R,S TXT08E
TR645	ET-397160J	TR 2SC3330 R,S,T,U,V [EXCEPT EA]
TR646	ET-416932J	TR CHIP 2SB709A R,S TXT08E [EK,EOG,EOH-VD]
TR647	ET-416932J	TR CHIP 2SB709A R,S TXT08E
TR648	ET-416932J	TR CHIP 2SB709A R,S TXT08E
TR649	ET-397160J	TR 2SC3330 R,S,T,U,V
TR650	ET-397160J	TR 2SC3330 R,S,T,U,V
TR652	ET-421941J	TR UN4213 T05
TR653	ET-421941J	TR UN4213 T05
TR654	ET-414836J	TR CHIP UN2213 TXT08E
TR655	ET-416932J	TR CHIP 2SB709A R,S TXT08E
TR656	ET-416932J	TR CHIP 2SB709A R,S TXT08E
TR657	ET-421984J	TR CHIP UN211D TXT08E
TR659	ET-421934J	TR UN411D T05
TU1-A	EE-387600J2	TV TUNER TERS1-002C EA [EA]
TU1-B	EE-387607J1	TV TUNER TERB1-008B EK [EK]
TU1-C	EE-387604J3	TV TUNER TERE1-007D EOG [EO]
TU1-D	EE-412395J	TV TUNER ENV-578C9F1 EOH [EOH]
TU1-E	EE-416524J1	TV TUNER TEKE4-034B EOG [EOG]

Ref. No.	Part No.	Description
VR601	EV-389482J	R S-FIX H T05EVNDXAA03 0.1W682
VR602	EV-389478J	R S-FIX H T05EVNDXAA03 0.1W153
VR603	EV-389476J	R S-FIX H T05EVNDXAA03 0.1W103
VR604	EV-389476J	R S-FIX H T05EVNDXAA03 0.1W103
VR605	EV-397433J	R S-FIX H T05EVNDXAA03 0.1W152
VR607	EV-389476J	R S-FIX H T05EVNDXAA03 0.1W103
VR608	EV-389480J	R S-FIX H T05EVNDXAA03 0.1W332
X401	EI-425240J	OSC X'TALAPS-1011A 16.000MHZ
X601	EI-422510J	OSC X'TAL HC-49/U 4433.619KHZ
X602	EI-416872J	OSC X'TALAPS1004A 17.734475MH
X603	EI-422092J	OSC X'TALAPS1008 3RD27.000MHZ [EOH-DN[Y1]]
1	SZ-420137J	HOLDER S/E SENSOR
2	SZ-420136J	HOLDER PHOTO SENSOR
3	SZ-423208J	HOLDER LED

8. TR (A) P.C. BOARD

Ref. No.	Part No.	Description
TR202	✱ET-422511J	TR 2SD2375 P

9. VIF UNIT

Ref. No.	Part No.	Description
CF1-A	EH-732529J	FILTER CE SAF31.4MC70Z [EA]
CF1-B	EH-733747J	FILTER CE SAF32.9MC70Z [EK]
CF1-C	EH-732528J	FILTER CE SAF33.4MC70Z [EO;EOG,EOH-VD]
CF1-D	EH-733748J	FILTER CE SAF33.0MC70Z [EOH-DN]
CF2-A	EH-730625J	FILTER CE SAF38.9MZW70Z [EXCEPT EA,EK]
CF2-B	EH-373916	FILTER CE SAF36.9MZ70Z [EA]
CF2-C	EH-373917	FILTER CE SAF39.5MZ70Z [EK]
CF3-A	EH-368948J1	FILTER CE TPS5.5MW 5.5000MHZ [EXCEPT EK]
CF3-B	EH-733749J	FILTER CE TPS6.0MB2 [EK]
CF4-A	EH-416920J1	FILTER CE SFT6.0MA [EK]
CF4-B	EH-394948J1	FILTER CE SFT5.5MA [EOH-DN]
D1	ED-733546J	D VARACTOR CHIP HVU202A3TRF [EOH]
IC1-A	EI-729997J	IC LA7575 [EXCEPT EK,EOH-DN]
IC1-B	EI-733547J	IC LA7577 [EK,EOH-DN]
L1	EO-725824J	COIL 6F16185A1 [EO,EOG]
L2	EO-725825J	COIL 6F16186A1 [EO,EOG]
L3-A	EO-381188J	COIL FIX 1 EL0405SKI 1R0K [EA]
L3-B	EO-391141J	COIL FIX 1 EL0405SKI R47M [EK,EOH]
L4-A	EO-392817J	COIL FIX 1 EL0405SKI 1R2K [EXCEPT EK,EOH-DN]
L4-B	EO-381188J	COIL FIX 1 EL0405SKI 1R0K [EK,EOH-DN]
L5	EO-388160J	COIL FIX 1 EL0405SKI 1R8K [EA,EK,EOH]
L6-A	EO-732831J	COIL 6F16437A2 [EK]
L6-B	EO-388160J	COIL FIX 1 EL0405SKI 1R8K [EO,EOG]
L6-C	EH-733514J	COIL 6F16437A1 [EOH-DN]
L7	EO-732832J	COIL 6F16435A1
L8	EO-732656J	COIL OSC 6F16403B1
L9	EO-387781J	COIL FIX 1 EL0405SKI 120K
L10	EO-381196J	COIL FIX 1 EL0405SKI 470K
Q1	ET-731437J	TR CHIP DTC114EK [EO,EOG]
Q2	ET-731437J	TR CHIP DTC114EK [EO,EOG]
Q3	ET-725820J	TR CHIP 2SC2735J
Q6	ET-370819	TR CHIP 2SC3052
Q7	ET-370818	TR CHIP 2SA1235 [EK,EOH-DN]
VR1	EV-404266J	R S-FIX H RH0681C 0.30W 223
VR2	EV-404266J	R S-FIX H RH0681C 0.30W 223 [EO,EOG]
VR3	EV-733548J	R S-FIX H RH063EC14R015 103 [EK,EOH-DN]

10. IN/OUT (A) P.C. BOARD

Ref. No.	Part No.	Description
D1	ED-307572	D SILICON H 1SS131 [EOG]
D2	ED-307572	D SILICON H 1SS131
D3	ED-307572	D SILICON H 1SS131
PJ1	EJ-389864J	SOCKET M1817 21P [EXCEPT EA]
PJ2-A	EJ-389864J	SOCKET M1817 21P [EK,EO,EOH]
PJ2-B	EJ-389915J	SOCKET M1817-A 21P [EOG]
PJ3	EJ-422097J	PIN J JPJ1131-010040 1P
PJ4	EJ-418853J	PIN J JPJ1131-010030 1P
PJ5	EJ-418854J	PIN J JPJ1131-010020 1P
PJ6	EJ-422552J	PIN J JPJ2202-01-040 1P [EA]
PJ7	EJ-422553J	PIN J JPJ2202-01-030 1P
PJ8	EJ-422554J	PIN J JPJ2202-01-020 1P
TR1	ET-397160J	TR 2SC3330 R,S,T,U,V [EXCEPT EA]
TR2	ET-397160J	TR 2SC3330 R,S,T,U,V [EXCEPT EA]
TR3	ET-397160J	TR 2SC3330 R,S,T,U,V [EXCEPT EA]
TR4	ET-397160J	TR 2SC3330 R,S,T,U,V [EXCEPT EA]
TR5	ET-397160J	TR 2SC3330 R,S,T,U,V
TR6	ET-397160J	TR 2SC3330 R,S,T,U,V

11. IN/OUT (B) P.C. BOARD

Ref. No.	Part No.	Description
IC101	EI-408961J	IC MM1031XS [EXCEPT EA]
IC102	EI-408961J	IC MM1031XS [EOG]
IC103	EI-332259	IC TC4052BP
IC104	EI-416646J	IC MM1113XS
L101	EO-345880	COIL FIX 1 EL0606SKI 820J
L102	EO-345880	COIL FIX 1 EL0606SKI 820J
L103	EO-345880	COIL FIX 1 EL0606SKI 820J
TR101	ET-421941J	TR UN4213 T05
TR102	ET-421941J	TR UN4213 T05
TR103	ET-353899	TR 2SA1317 S,T,U [EA]

12. IN/OUT (C) P.C. BOARD

Ref. No.	Part No.	Description
D201	ED-307572	D SILICON H 1SS131
D202	ED-307572	D SILICON H 1SS131 [EXCPT EA]
D203	ED-307572	D SILICON H 1SS131 [EK,EO,EOH]
D204	ED-307572	D SILICON H 1SS131 [EK,EO,EOH]
IC205	EI-200573	IC TC4053BP
IC206	EI-200573	IC TC4053BP [EXCEPT EA]
IC207	EI-310036	IC TC4066BP [EOG]
IC208	EI-416647J	IC MM1111XS [EOG]
TR201	ET-397160J	TR 2SC3330 R,S,T,U,V
TR202	ET-397160J	TR 2SC3330 R,S,T,U,V
TR203	ET-419712J	TR UN4115 R,S T05
TR204	ET-421944J	TR UN4215 R,S T05
TR205	ET-421941J	TR UN4213 T05 [EOG]
TR206	ET-421941J	TR UN4213 T05 [EXCEPT EA]
TR207	ET-397160J	TR 2SC3330 R,S,T,U,V [EXCEPT EA]
TR208	ET-397160J	TR 2SC3330 R,S,T,U,V [EXCEPT EA]
TR209	ET-397160J	TR 2SC3330 R,S,T,U,V [EXCEPT EA]
TR210	ET-353899	TR 2SA1317 S,T,U
TR211	ET-353899	TR 2SA1317 S,T,U
TR212	ET-353899	TR 2SA1317 S,T,U
TR216	ET-353899	TR 2SA1317 S,T,U
TR217	ET-421941J	TR UN4213 T05
TR218	ET-421941J	TR UN4213 T05
TR251	ET-419710J	TR UN4113 T05 [EOG]
TR252	ET-421941J	TR UN4213 T05 [EOG]
TR253	ET-422031J	TR UN4210 R,S T05 [EXCEPT EA]
TR254	ET-422031J	TR UN4210 R,S T05 [EK,EO,EOH]
TR255	ET-421941J	TR UN4213 T05 [EK,EO,EOH]
TR256	ET-419710J	TR UN4113 T05 [EXCEPT EA]
TR257	ET-421941J	TR UN4213 T05 [EXCEPT EA]
TR258	ET-421941J	TR UN4213 T05 [EXCEPT EA]

13. SECAM DET AND NTSC P.C. BOARD (EA,EK,EOG)

Ref. No.	Part No.	Description
D351	ED-307572	D SILICON H 1SS131
IC351	EI-200573	IC TC4053BP
IC352	EI-356457	IC BU4013B
L301	EO-345881	COIL FIX 1 EL0606SKI 101J
TR351	ET-421941J	TR UN4213 T05
TR352	ET-397160J	TR 2SC3330 R,S,T,U,V
TR353	ET-397160J	TR 2SC3330 R,S,T,U,V
TR354	ET-397160J	TR 2SC3330 R,S,T,U,V
TR355	ET-397160J	TR 2SC3330 R,S,T,U,V

14. PREAMP AND HI-FI P.C. BOARD

Ref. No.	Part No.	Description
D2	ED-307572	D SILICON H 1SS131
D3	ED-307572	D SILICON H 1SS131
D4	ED-307572	D SILICON H 1SS131
D5	ED-307572	D SILICON H 1SS131
D6	ED-307572	D SILICON H 1SS131
D106	ED-307572	D SILICON H 1SS131
D107	ED-418996J	D ZENER H MTZJ3.0A T26
D108	ED-428020J	D SCHOTTKY CHIP MA716 TXT08E
D110	ED-307572	D SILICON H 1SS131 [EA,EOG,EK]
D111	ED-419028J	D SILICON CHIP MA152WK TXT08E
D112	ED-410157J	D SILICON CHIP MA152WA [EA,EOG,EK]
D130	ED-419028J	D SILICON CHIP MA152WK TXT08E
IC1	EI-416607J	IC AN3386NK-A
IC101	EI-425194J	IC AN3963NFBPA
IC102	EI-425189J	IC AN3317K
L1	EO-414622J	COIL FIX 1 EL0607RA T05 101K
L3	EO-412304J	COIL FIX 1 LAP02TA T26 390J
L4	EO-351862	COIL FIX 1 LAP02 F05 100K
L5	EO-353900	COIL FIX 1 LAP02 F05 150K
L6	EO-354600	COIL FIX 1 LAP02 F05 101K
L7	EO-414830J	COIL FIX 1 LAP02TA T26 220J
L101	EO-351868	COIL FIX 1 LAP02 F05 470K
L102	EO-351868	COIL FIX 1 LAP02 F05 470K
L103	EO-351868	COIL FIX 1 LAP02 F05 470K
L104	EO-392659J	COIL FIX 1 LHL06TB T05 562J
L107	EO-351868	COIL FIX 1 LAP02 F05 470K
L108	EO-400782J	COIL FIX 1 EL0606RA T05 222J
L109	EO-400782J	COIL FIX 1 EL0606RA T05 222J
L110	EO-351868	COIL FIX 1 LAP02 F05 470K
P3	EJ-422563J	SOCKET HLEM16R-1 16P
P101	EJ-422061J	SOCKET 00 6216 018 100 18P
P129	EJ-422094J1	SOCKET TKC-F06X-E1 6P
P130	EJ-422569J1	SOCKET TKC-F12X-E1 12P
TH1	* EX-405691J	THERMISTOR NTH5D332KA
TR4	ET-416932J	TR CHIP 2SB709A R,S TXT08E
TR5	ET-416933J	TR CHIP 2SD601A R,S TXT08E
TR6	ET-416933J	TR CHIP 2SD601A R,S TXT08E
TR7	ET-414836J	TR CHIP UN2213 TXT08E
TR8	ET-416933J	TR CHIP 2SD601A R,S TXT08E
TR9	ET-416932J	TR CHIP 2SB709A R,S TXT08E
TR10	ET-421993J	TR CHIP UN2215 R,S TXT08E
TR11	ET-416932J	TR CHIP 2SB709A R,S TXT08E
TR12	ET-416932J	TR CHIP 2SB709A R,S TXT08E
TR13	ET-414836J	TR CHIP UN2213 TXT08E
TR14	ET-414836J	TR CHIP UN2213 TXT08E
TR15	ET-414836J	TR CHIP UN2213 TXT08E
TR16	ET-421979J	TR CHIP UN2115 R,S TXT08E
TR101	ET-421993J	TR CHIP UN2215 R,S TXT08E
TR102	ET-414836J	TR CHIP UN2213 TXT08E
TR103	ET-421977J	TR CHIP UN2113 TXT08E
TR104	ET-421993J	TR CHIP UN2215 R,S TXT08E
TR105	ET-421993J	TR CHIP UN2215 R,S TXT08E [EK,EOH-DN]
TR106	ET-421993J	TR CHIP UN2215 R,S TXT08E
TR108	ET-414836J	TR CHIP UN2213 TXT08E
TR112	ET-421990J	TR CHIP UN2211 TXT08E
TR115	ET-416932J	TR CHIP 2SB709A R,S TXT08E
TR116	ET-421991J	TR CHIP UN2212 TXT08E
TR118	ET-416932J	TR CHIP 2SB709A R,S TXT08E
TR119	ET-416932J	TR CHIP 2SB709A R,S TXT08E
TR120	ET-421991J	TR CHIP UN2212 TXT08E
TR121	ET-421991J	TR CHIP UN2212 TXT08E
TR122	ET-427131J	TR CHIP DTA115TK
TR126	ET-421991J	TR CHIP UN2212 TXT08E [EA,EOG,EK]
TR127	ET-422000J	TR CHIP UN221E TXT08E [EA,EOG,EK]
TR130	ET-414836J	TR CHIP UN2213 TXT08E
TR131	ET-421991J	TR CHIP UN2212 TXT08E [EA,EOG,EK]
VR1	EV-408710J	R S-FIX V T05EVNDCAA03 0.1 W472
VR101	EV-389482J	R S-FIX H T05EVNDXAA03 0.1 W682
VR102	EV-389489J	R S-FIX H T05EVNDXAA03 0.1 W472

15. OSC P.C. BOARD

Ref. No.	Part No.	Description
D101	ED-307572	D SILICON H 1SS131
D102	ED-418996J	D ZENER H MTZJ3.0A T26
D104	ED-427158J	D SILICON CHIP MA153A TXT08E
FL101	EO-418830J	COIL OSC 1 6063 70.0KHZ
IC103	EI-385995J	IC BA7755A
L106	EO-390716J	COIL FIX 1 LHL06TB T05 272J
TR109	ET-421990J	TR CHIP UN2211 TXT08E
TR110	ET-416933J	TR CHIP 2SD601A R,S TXT08E
TR111	ET-416933J	TR CHIP 2SD601A R,S TXT08E
TR117	ET-416932J	TR CHIP 2SB709A R,S TXT08E

16. OPERATION (A) P.C. BOARD

Ref. No.	Part No.	Description
C23	* EC-425398J	C DOUBLE FYD0H473Z 5.5DC
D1	ED-404221J	D ZENER H MTZJ6.2B T26
D2	ED-307572	D SILICON H 1SS131
D3	ED-307572	D SILICON H 1SS131
D4	ED-397233J	D ZENER H HZS5C3
D5	ED-307572	D SILICON H 1SS131
D6	ED-307572	D SILICON H 1SS131
D9	ED-307572	D SILICON H 1SS131
D10	ED-418722J	D ZENER H MTZJ4.3A T26
D11	ED-425712J	D ZENER H MTZJ18B T26
D12	ED-307572	D SILICON H 1SS131
D13	ED-307572	D SILICON H 1SS131
D14	ED-307572	D SILICON H 1SS131
D15	ED-307572	D SILICON H 1SS131
FL1	EO-418856J	COIL OSC 1 6067A 70.0KHZ
FL2	EO-425267J	COIL OSC 1125-8086-31 62.5KHZ
FR2	* ER-307565	R FUSE H S10 ERD2FC 1/4W 6R8J
FR3	* ER-400729J	R FUSE V T05 RF25SCVTP1/4WR47K
IB1	EH-383057J	COMP R RGLE5X 473J
IB2	EH-378541J	COMP R RGLE3X 473J
IB3	EH-378541J	COMP R RGLE3X 473J
IB4	EH-383083J	COMP R RGLE3X 103J
IB5	EH-383057J	COMP R RGLE5X 473J
IB6	EH-425932J	COMP R RGLE10X 473J
IB7	EH-383099J	COMP R RGLE4X 472J
IC1	EI-425719J1	IC M38174M8-260FPATXOPP3
IC2	EI-416691J	IC XC61AC3002TH T05
IC3	EI-364896	IC BA6138
IC4	EI-403233J	IC LB1641
L1	EO-390716J	COIL FIX 1 LHL06TB T05 272J
L2	EO-410256J	COIL FIX 1 EL0405RA T05 100J
L3	EO-410256J	COIL FIX 1 EL0405RA T05 100J
P18	EJ-397357J	SOCKET HLEM13R-1 13P
P47	EJ-425296J	SOCKET HLEM6R-1 6P
P49	EJ-416651J	SOCKET 00 6216 016 100 16P
P50	EJ-416651J	SOCKET 00 6216 016 100 16P
P51	EJ-425292J	SOCKET 00 6200 077012800 7P
TR1	ET-397160J	TR 2SC3330 R,S,T,U,V
TR2	ET-397160J	TR 2SC3330 R,S,T,U,V
TR3	ET-421943J	TR UN4214 T05
TR4	ET-353899	TR 2SA1317 S,T,U
TR5	ET-425262J	TR 2SD1758 Q,R (CPT F5)
TR6	ET-421941J	TR UN4213 T05
TR7	ET-353899	TR 2SA1317 S,T,U
TR8	ET-422254J	TR UN4117 R,S T05
TR9	ET-415140J	TR DTA115TS T05
TR10	ET-422031J	TR UN4210 R,S T05
TR11	ET-421952J	TR UN421L T05
TR12	ET-421941J	TR UN4213 T05
TR13	ET-419710J	TR UN4113 T05
TR15	ET-419710J	TR UN4113 T05
TR16	ET-353899	TR 2SA1317 S,T,U
TR17	ET-421941J	TR UN4213 T05
X1	EI-368825M	OSC X'TAL C-002RX 32.768KHZ
X2	EI-405327J	OSC CE CST6.00MGW 6.000MHZ

17. TR (C) P.C. BOARD

Ref. No.	Part No.	Description
TR14	* ET-422511J	TR 2SD2375 P

18. OPTRATION (B) P.C. BOARD

Ref. No.	Part No.	Description
P247	EJ-425296J	SOCKET HLEM6R-1 6P
SW202	ES-411687J	SW TACT EVQ-PAE05R
SW203	ES-411687J	SW TACT EVQ-PAE05R
SW205	ES-411687J	SW TACT EVQ-PAE05R
SW206	ES-411687J	SW TACT EVQ-PAE05R
SW208	ES-411687J	SW TACT EVQ-PAE05R
SW209	ES-411687J	SW TACT EVQ-PAE05R
SW210	ES-411687J	SW TACT EVQ-PAE05R
SW211	ES-411687J	SW TACT EVQ-PAE05R
SW212	ES-411687J	SW TACT EVQ-PAE05R
SW216	ES-411687J	SW TACT EVQ-PAE05R
SW217	ES-411687J	SW TACT EVQ-PAE05R
SW220	ES-411687J	SW TACT EVQ-PAE05R

19. FRONT P.C. BOARD

Ref.No.	Part No.	Description
D1	ED-307572	D SILICON H 1SS131
D2	ED-425270J	D LED GL5ED44 RED,GREEN
D3	ED-307572	D SILICON H 1SS131
D4	ED-418996J	D ZENER H MTZJ3.0A T26
IC1	EI-386468J	IC BA3308
L1	EO-354600	COIL FIX 1 LAP02 F05 101K
PH1	ET-414585J	DETECTOR GP1U571X
PJ1	EJ-410383J	PHONE J 2P HSJ1406-01-010 3.5
PJ2	EJ-362033	PHONE J 3P HSJ1406 3.5
PJ21	EJ-387623J	PIN J JPJ5022-01-040 1P
PJ22	EJ-396453J	PIN J JPJ5022-01-030 1P
PJ23	EJ-396452J	PIN J JPJ5022-01-020 1P
SW1	ES-390156J1	SW SLIDE SSSS91690B 1-01-02N
SW2	ES-390156J1	SW SLIDE SSSS91690B 1-01-02N
TR1	ET-421945J	TR UN4216 R,S T05
TR2	ET-421945J	TR UN4216 R,S T05
TR21	ET-397160J	TR 2SC3330 R,S,T,U,V
TR22	ET-397160J	TR 2SC3330 R,S,T,U,V
TR23	ET-397160J	TR 2SC3330 R,S,T,U,V
VR1	EV-425275J	VR ROTARY RK09K1130L15 B203 FL
VR2	EV-416648J	VR ROTARY RK09K1130L15 C203 FL
VR3	EV-416648J	VR ROTARY RK09K1130L15 C203 FL

20. OPERATION (C) P.C. BOARD

Ref. No.	Part No.	Description
SW301	ES-411687J	SW TACT EVQ-PAE05R
SW304	ES-411687J	SW TACT EVQ-PAE05R
SW307	ES-411687J	SW TACT EVQ-PAE05R
SW313	ES-411687J	SW TACT EVQ-PAE05R
SW314	ES-411687J	SW TACT EVQ-PAE05R
SW315	ES-411687J	SW TACT EVQ-PAE05R
SW318	ES-411687J	SW TACT EVQ-PAE05R
SW319	ES-411687J	SW TACT EVQ-PAE05R
SW322	ES-411687J	SW TACT EVQ-PAE05R
SW323	ES-411687J	SW TACT EVQ-PAE05R

21. POWER SUPPLY P.C. BOARD

Ref. No.	Part No.	Description
C1	* EC-422101J	C MMY V CUT MKTR40 104M 275AC
C2	* EC-422101J	C MMY V CUT MKTR40 104M 275AC
C3	* EC-418706J	C CE V CUT CS11 E222M 400AC
C4	* EC-418706J	C CE V CUT CS11 E222M 400AC
C5	* EC-418706J	C CE V CUT CS11 E222M 400AC
C6	* EC-418706J	C CE V CUT CS11 E222M 400AC
C7	* EC-418706J	C CE V CUT CS11 E222M 400AC
C8	* EC-418706J	C CE V CUT CS11 E222M 400AC
C9	* EC-418706J	C CE V CUT CS11 E222M 400AC
C11	* EC-422103J	C EC V CUT TWSS 470M400.0DC
C12	* EC-418760J	C CE V T05 FK22 Y5R103K 500DC
C13	* EC-418759J	C CE V T05 CC45 SL121K1000DC
C14	EC-418841J	C MMY V T05 ECQ-VL2 333J 50DC
C15	* EC-418841J	C MMY V T05 ECQ-VL2 333J 50DC
C24	EC-418690J	C EC V CUT SXE12 222M 6.3DC
D1	* ED-422125J	D SILICON 1N4006 T26 800/1.0A
D2	* ED-422125J	D SILICON 1N4006 T26 800/1.0A
D3	* ED-422125J	D SILICON 1N4006 T26 800/1.0A
D4	* ED-422125J	D SILICON 1N4006 T26 800/1.0A
D5	* ED-418976N	D SILICON EG01CW T05 1000/0.5A
D6	ED-307572	D SILICON H 1SS131
D7	ED-307572	D SILICON H 1SS131
D21	ED-425207J	D SILICON ERA18-02 T26
D24	ED-425207J	D SILICON ERA18-02 T26
D25	* ED-422420J	D ZENER H MTZJ20C T26
D27	* ED-422420J	D ZENER H MTZJ20C T26
D29	ED-422462J	D SCHOTTKY RK49 015-302 S15
D30	ED-422244J	D SCHOTTKY RK34LF-B2 S12
D31	ED-307572	D SILICON H 1SS131
D32	ED-422243N	D SCHOT.AK03WK T05
F1	* EF-601964	FUSE SET T 250V 1.60A
IC2	EI-422128N	IC TA76431S T05
L1	* EO-339907	COIL LF FKOB160MH16 1000.0UH [EOG]
L2	* EO-418689J	COIL LF LF-4DA-333
PH1	* ET-422113J	PHOTO COUPLER PS2561-1-V
P1	* EJ-416590J1	SOCKET INLET CCT-2302-0371 2P
R1	* ER-418739J	R CT P RGG3 3W 4R7K
R2	* ER-422181J	R OMF H S20 FS ERG3SH 3W 823J
R6	* ER-422186J	R OMF H S15 FS PR02 2W 151J
R7	* ER-411836J	R OMF H S15 FS 2W 1R0J
R11	ER-318316	R MF H F10 1/4W 2201F
R12	ER-314600	R MF H 1/4W 1601F
R27	* ER-386215J	R OMF H S12 FS 1W 220J
T1	* BT-422117N	TRANS POW V1190 EOG
TR1	* ET-422118J	TR 2SC4304 O,Y
TR2	* ET-422129J	TR 2SD2132 U,V T05

22. D-MULTI P.C. BOARD (EA,EO,EOG,EOH-VD)

Ref. No.	Part No.	Description
FL1	EH-394947J1	FILTER CE SFT5.74MA
FL2	EH-394948J1	FILTER CE SFT5.5MA
IC1	EI-389644J	IC BA403
IC2	EI-389644J	IC BA403
IC3	EI-416611J	IC TDA8417
L1	EO-381189J	COIL FIX 1 EL0405SKI 100K
L2	EO-381189J	COIL FIX 1 EL0405SKI 100K
L3	EO-381189J	COIL FIX 1 EL0405SKI 100K
TR1	ET-397160J	TR 2SC3330 R,S,T,U,V
TR2	ET-397160J	TR 2SC3330 R,S,T,U,V
TR3	ET-397160J	TR 2SC3330 R,S,T,U,V
TR4	ET-397160J	TR 2SC3330 R,S,T,U,V
VL1	EO-416928J	COIL TUN 1 V1173-035 5.74
VL2	EO-416926J	COIL TUN 1 V1173-033 5.5
VR1	EV-394962J	R S-FIX H T05EVNDXAA03 0.1W102
X1	EI-425185J	OSC X'TALASP-1006 10.000MHZ

23. D-NICAM P.C. BOARD (EK,EOH-DN)

Ref. No.	Part No.	Description
FL1	EH-397511J	FILTER LC BP TH316BQKS-2982QDD [EOH-DN]
FL82	EH-382829J	FILTER LC BP TH316BQM-2110QDAF [EK]
FL101	EH-394947J1	FILTER CE SFT5.74MA [EOH-DN]
FL102	EH-394948J1	FILTER CE SFT5.5MA [EOH-DN]
IC1	EI-425190J	IC TDA8204
IC2	EI-425191J	IC TDA8205
IC101	EI-389644J	IC BA403 [EOH-DN]
IC102	EI-389644J	IC BA403 [EOH-DN]
IC103	EI-416611J	IC TDA8417 [EOH-DN]
L1	EO-381189J	COIL FIX 1 EL0405SKI 100K
L2	EO-381189J	COIL FIX 1 EL0405SKI 100K
L3	EO-381189J	COIL FIX 1 EL0405SKI 100K
L4	EO-381189J	COIL FIX 1 EL0405SKI 100K
L5	EO-381189J	COIL FIX 1 EL0405SKI 100K
L6	EO-381189J	COIL FIX 1 EL0405SKI 100K
L101	EO-381189J	COIL FIX 1 EL0405SKI 100K [EOH-DN]
L102	EO-381189J	COIL FIX 1 EL0405SKI 100K [EOH-DN]
L103	EO-381189J	COIL FIX 1 EL0405SKI 100K [EOH-DN]
TR1	ET-397160J	TR 2SC3330 R,S,T,U,V [EOH-DN]
TR2	ET-397160J	TR 2SC3330 R,S,T,U,V [EOH-DN]
TR3	ET-421941J	TR UN4213 T05
TR4	ET-422031J	TR UN4210 R,S T05
TR5	ET-397160J	TR 2SC3330 R,S,T,U,V
TR6	ET-397160J	TR 2SC3330 R,S,T,U,V
TR81	ET-397160J	TR 2SC3330 R,S,T,U,V [EK]
TR82	ET-397160J	TR 2SC3330 R,S,T,U,V [EK]
TR101	ET-397160J	TR 2SC3330 R,S,T,U,V [EOH-DN]
TR102	ET-397160J	TR 2SC3330 R,S,T,U,V [EOH-DN]
VL101	EO-416928J	COIL TUN 1 V1173-035 5.74 [EOH-DN]
VL102	EO-416926J	COIL TUN 1 V1173-033 5.5 [EOH-DN]
VR101	EV-394962J	R S-FIX H T05EVNDXAA03 0.1W102 [EOH-DN]
X1	EI-425184J	OSC X'TALAPS-1007 11.648MHZ
X101	EI-425185J	OSC X'TALASP-1006 10.000MHZ [EOH-DN]

24. VPST/PDCT P.C. BOARD (EOG,EK,EOH-VD)

Ref. No.	Part No.	Description
D101	ED-419028J	D SILICON CHIP MA152WK TXT08E
FL101	EH-394684J	FILTER EMI ZBF503D-00TA T05
FL102	EH-394684J	FILTER EMI ZBF503D-00TA T05
FL103	EH-394684J	FILTER EMI ZBF503D-00TA T05
FL104	EH-394684J	FILTER EMI ZBF503D-00TA T05
FL105	EH-394684J	FILTER EMI ZBF503D-00TA T05
FR121	* ER-408963J	R FUSE V T05 RF25SCVTP1/4WR33K
IB101	EH-383119J	COMP R RGLE4X 473J
IC101	EI-418863J2	IC UPD78014CW-072AXVPT3
IC102	EI-425666J	IC 24LC08B/SN
IC103	EI-422375J	IC MC14013BFR2
IC121	EI-386393J	IC BA7605N
IC141	EI-414885J	IC CF72306
IC142	EI-414884J	IC CF72307
IC143	EI-410125J	IC V53C464AP-80
IC241	EI-422365J	IC CXA1645M
IC301	EI-422382J	IC SAA5233T
L101	EO-410091J	COIL FIX 1 SPT0203SA T26 100J
L102	EO-410091J	COIL FIX 1 SPT0203SA T26 100J
L103	EO-410091J	COIL FIX 1 SPT0203SA T26 100J
L121	EO-410091J	COIL FIX 1 SPT0203SA T26 100J
L142	EO-410091J	COIL FIX 1 SPT0203SA T26 100J
L143	EO-410091J	COIL FIX 1 SPT0203SA T26 100J
L144	EO-410091J	COIL FIX 1 SPT0203SA T26 100J
L241	EO-410091J	COIL FIX 1 SPT0203SA T26 100J
L242	EO-410091J	COIL FIX 1 SPT0203SA T26 100J
L271	EO-410091J	COIL FIX 1 SPT0203SA T26 100J
L272	EO-414831J	COIL FIX 1 LAP02TA T26 680J
L301	EO-412317J	COIL FIX 1 LAP02TA T26 4R7J
L302	EO-410091J	COIL FIX 1 SPT0203SA T26 100J
TR121	ET-419706J	TR 2SB1434 R,S T05
TR122	ET-422003J	TR CHIP UN221L TXT08E
TR123	ET-416932J	TR CHIP 2SB709A R,S TXT08E
TR202	ET-397160J	TR 2SC3330 R,S,T,U,V
TR203	ET-353899	TR 2SA1317 S,T,U
TR204	ET-397160J	TR 2SC3330 R,S,T,U,V
TR205	ET-397160J	TR 2SC3330 R,S,T,U,V
TR206	ET-421952J	TR UN421L T05
TR241	ET-416932J	TR CHIP 2SB709A R,S TXT08E
TR261	ET-397160J	TR 2SC3330 R,S,T,U,V [EOG]
TR262	ET-421952J	TR UN421L T05 [EOG]
TR271	ET-353899	TR 2SA1317 S,T,U
TR272	ET-353899	TR 2SA1317 S,T,U
TR273	ET-397160J	TR 2SC3330 R,S,T,U,V
TR274	ET-397160J	TR 2SC3330 R,S,T,U,V
X101	EI-414889J	OSC CE CST10.0MTW-TF01 T05
X141	EI-422503J	OSC X'TALAPS1010B 13.875MHZ
X301	EI-422373J	OSC X'TALAPS1008B3RDH27.00MHZ

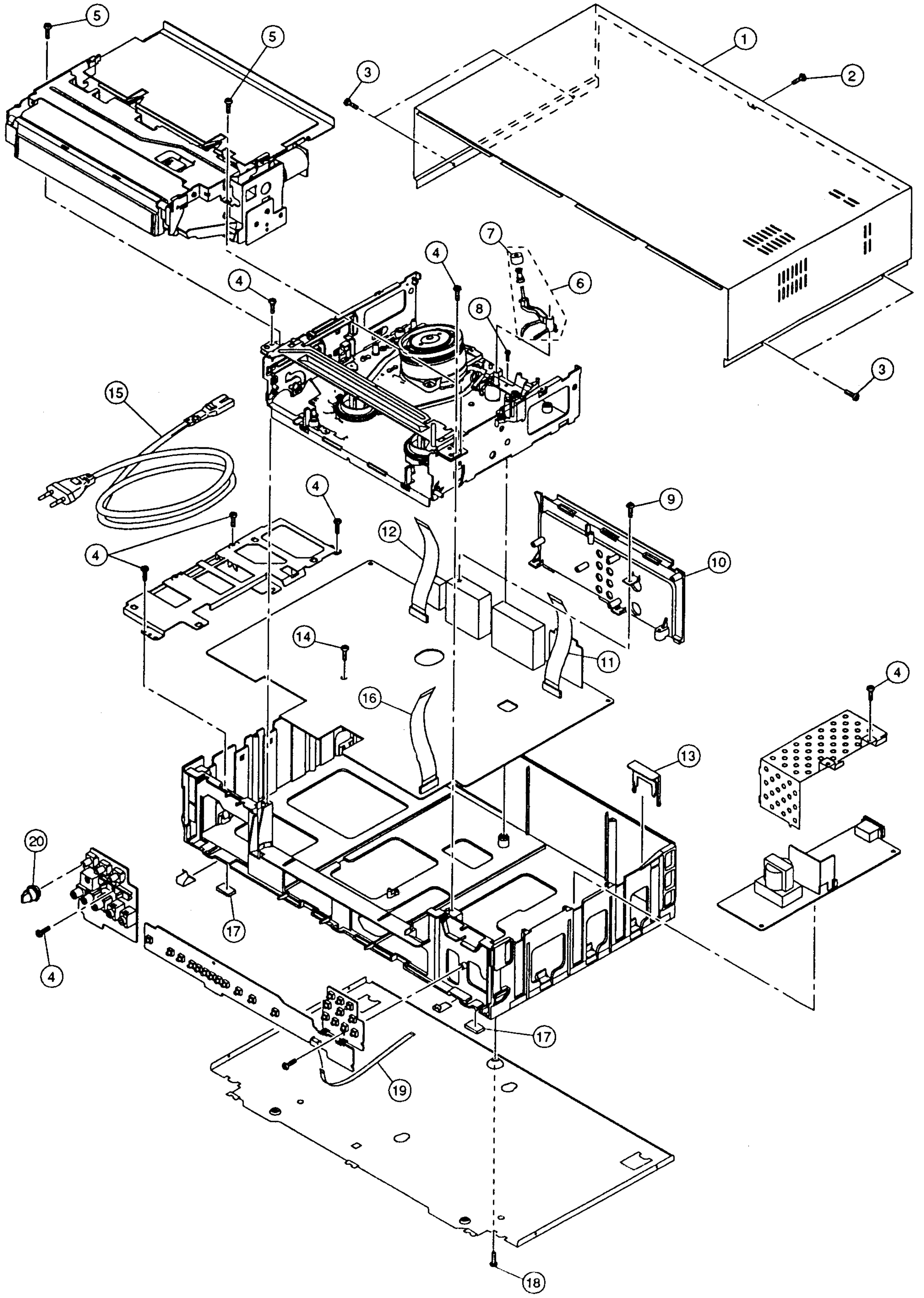
25. CDR P.C. BOARD

Ref. No.	Part No.	Description
D1	ED-397614J	D ZENER H HZS9A3L T26
D2	ED-307572	D SILICON H 1SS131
D3	ED-307572	D SILICON H 1SS131
DL1	EH-422240J	DL ADL-SN2344Q
IC1	EI-422218J	IC M51494L
IC2	EI-400756J	IC NJM4558L-B
L1	EO-403270J	COIL FIX 1 EL0405RA T05 101J
L2	EO-403270J	COIL FIX 1 EL0405RA T05 101J
L3	EO-410091J	COIL FIX 1 SPT0203SA T26 100J
L4	EO-414616J	COIL FIX 1 LAP02TA T26 270J
TR1	ET-397160J	TR 2SC3330 R,S,T,U,V
TR3	ET-397160J	TR 2SC3330 R,S,T,U,V
TR4	ET-397160J	TR 2SC3330 R,S,T,U,V
TR5	ET-397160J	TR 2SC3330 R,S,T,U,V
TR6	ET-397160J	TR 2SC3330 R,S,T,U,V
TR10	ET-397160J	TR 2SC3330 R,S,T,U,V
TR11	ET-353899	TR 2SA1317 S,T,U
TR12	ET-397160J	TR 2SC3330 R,S,T,U,V
TR13	ET-397160J	TR 2SC3330 R,S,T,U,V
TR14	ET-397160J	TR 2SC3330 R,S,T,U,V
TR15	ET-397160J	TR 2SC3330 R,S,T,U,V
TR16	ET-353899	TR 2SA1317 S,T,U
TR17	ET-397160J	TR 2SC3330 R,S,T,U,V
VR3	EV-405248J	R S-FIX V T05EVNDCAA03 0.1W471
VR4	EV-403988J	R S-FIX V T05EVNDCAA03 0.1W102

26. EQ P.C. BOARD

Ref. No.	Part No.	Description
D1	ED-307572	D SILICON H 1SS131
D2	ED-307572	D SILICON H 1SS131
D3	ED-307572	D SILICON H 1SS131
D5	ED-307572	D SILICON H 1SS131
IC1	EI-425420J	IC M52364P
IC2	EI-373981J1	IC BA10393N
L1	EO-410100J	COIL FIX 1 SPT0203SA T26 560J
L3	EO-403270J	COIL FIX 1 EL0405RA T05 101J
L4	EO-403270J	COIL FIX 1 EL0405RA T05 101J
TR1	ET-397160J	TR 2SC3330 R,S,T,U,V
TR2	ET-353899	TR 2SA1317 S,T,U
TR3	ET-397160J	TR 2SC3330 R,S,T,U,V
TR4	ET-353899	TR 2SA1317 S,T,U
TR5	ET-397160J	TR 2SC3330 R,S,T,U,V
TR6	ET-421941J	TR UN4213 T05 [EA,EK,EOG]
TR7	ET-364040	TR UN421D
TR8	ET-353899	TR 2SA1317 S,T,U
TR9	ET-421939J	TR UN4211 T05
TR10	ET-397160J	TR 2SC3330 R,S,T,U,V
TR11	ET-397160J	TR 2SC3330 R,S,T,U,V
TR12	ET-397160J	TR 2SC3330 R,S,T,U,V
TR13	ET-421941J	TR UN4213 T05

FINAL ASSEMBLY BLOCK



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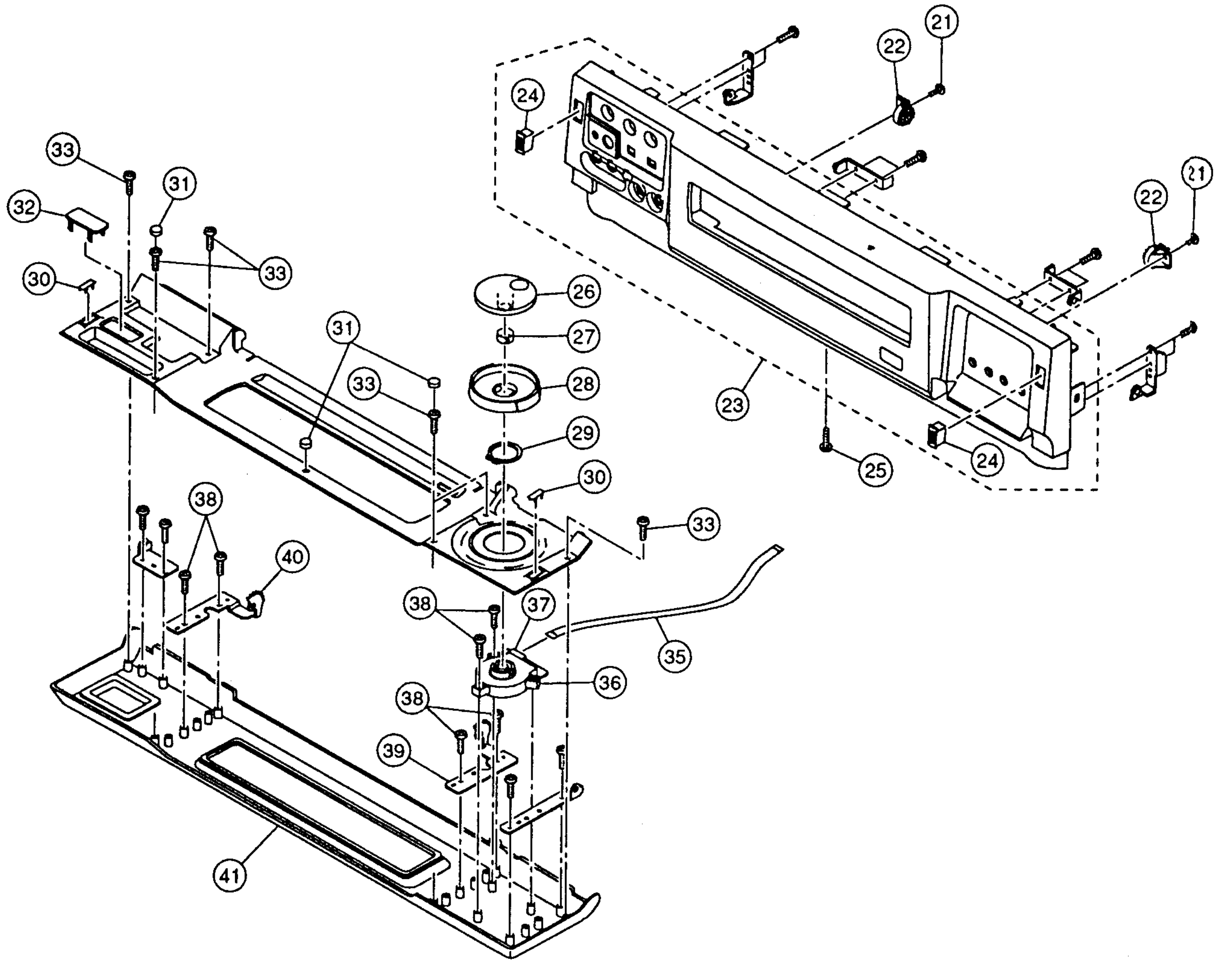

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27. FINAL ASSEMBLY BLOCK

Ref. No.	Part No.	Description
1	SP-424650J	COVER UPPER AIX
2	ZS-427134J	PT BID30X10STL BZN EARTH LOCK
3	ZS-385611J	DT BID26X06STL BNI
4	ZS-362378	PLX BID30X10STL CMT
5	ZS-358936	ST BID30X06STL CMT
6	HZ-V1182A200A	HEAD CLEANER BLK G204ES
7	HZ-417681J	ROLLER HEAD CLEANER(2)
8	ZS-407886J	BT PAN30X08STL BZN C100
9	ZS-323728	BID30X05STL CMT
10-A	SP-422611N	PANEL REAR JACK EOH-DN(3) (SG) [EXCEPT EA,EOG]
10-B	SP-422608N	PANEL REAR JACK EA-D (SG) [EA]
10-C	SP-422615N	PANEL REAR JACK EOG-D(2) (SG) [EOG]
11	EW-419012J	CORD SHIELD FFC L150 18P
12	EW-422531J	CORD FFC BD P1.25 L150 16P
13	SZ-420495N	COVER INLET (SG)
14	ZS-383379J	PLX BID30X08STL CMT
15-A	* EW-419249M	AC CORD 200S SE-1 SE-4 B E [EXCEPT EA,EK]
15-B	* EW-419250M	AC CORD 200 S SA-5SA-6 S [EA]
15-C	* EW-419248M	AC CORD 200S SE-5 SE-6 B B [EK]
16	EW-425279J	CORD FFC BD P1.25 L250 13P
17	SA-420497J	FOOT AX
18	ZS-378341	PLX BID30X12STL CMT
19	EW-425289J	CORD FFC BD P1.25 L250 6P
20	SK-424534J	KNOB VOL
21	ZS-357946	PLX PAN30X10STL CMT C080
22	SZ-409014J	DAMPER 3F96-F
23-A	BD-424712J	PANEL F(H)E1 PART [EA]
23-B	BD-424715J	PANEL F(H)E4 PART [EK]
23-C	BD-424714J	PANEL F(H)E3 PART [EO,EOH-VD]
23-D	BD-424713J	PANEL F(H)E2 PART [EOH-DN]
23-E	BD-424716J	PANEL F(H)G1 PART [EOG]
24	SZ-409013J	MAGNET HOLDER 3J09
25	ZS-391046J	PLX BID26X10STL BNI
26	SK-424729J	KNOB JOG(2)
27	SZ-408435J	COMPRESSION RING 10193
28	SK-424728J	KNOB SHUTTLE(2)
29	SZ-408436J	RING C S-19
30	SZ-409451J1	PLATE M
31	SZ-409480J	STOPPER DOOR
32	SE-424535J	WINDOW R3
33	ZS-409503J	BT BID20X08STL BZN
34-A	SP-423205J	DOOR(B)E1 [EXCEPT EA,EOG]
34-B	SP-424736J	DOOR(B)E2 [EA]
34-C	SP-423206J	DOOR(B)G1 [EOG]
35	EW-425290J	CORD FFC BD P1.00 L250 7P
36	ES-409005J	SW ROTARY ENCODER SRGPPJ-1 [SW1]
37	EJ-425292J	SOCKET 00 6200 077012800 7P [P51]
38	ZS-409501J	BT BID26X08STL CMT
39	MZ-424647J	ANGLE DOOR(SR)
40	SZ-424648J	ANGLE DOOR(SL)
41-A	BD-424719J	DOOR(A)G2100 E1 PART [EA]
41-B	BD-424723J	DOOR(A)G2200 E1 PART [EK]
41-C	BD-424722J	DOOR(A)G2100 E3 PART [EO]
41-D	BD-424720J	DOOR(A)G2100 E2 PART [EOH-DN[E]]
41-E	BD-424724J	DOOR(A)G2100 E4 PART [EOH-DN[Y1]]
41-F	BD-424725J	DOOR(A)G2160 E1 PART [EOH-VD]
41-G	BD-424726J	DOOR(A)G2200 G1 PART [EOG]

NOTE :
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

28. ACCESSARY

Ref. No.	Part No.	Description
1	EW-348414	CORD PAL
2-A	AV-425518J	REMOCON RC-W688E [EA]
2-B	AV-425251J	REMOCON RC-W458E [EK]
2-C	AV-425256J	REMOCON RC-W678E [EO,EOH-DN]
2-D	AV-425252J	REMOCON RC-W478E [EOH-VD]
2-E	AV-425253J	REMOCON RC-W478G [EOG]
3-A	SP-733753J	LID AX G-CODE-3 [RC-W688E]
3-B	SP-733737J	LID AX LCD-2 [RC-W458E]
3-C	SP-733736J	LID AX SHOWVIEW-2(ENG) [RC-W478E/W678E]
3-D	SP-733735J	LID AX SHOWVIEW-2(GER) [RC-W478G]
4	SC-733720J	COVER BATTERY (AX)

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ABBREVIATIONS (VIDEO)

ABBREVIATION	EXPLANATION
A	Audio or Analogue
AC	Alternating Current
ACC	Automatic Color Control
A/C	Audio and Control
ADJ	ADJust (ment)
AFC	Automatic Frequency Control
AFT	Automatic Fine Tuning
AGC	Automatic Gain Control
AH	Audio Head
AL	ALways (voltage)
ALC	Automatic Level Control
A-SW.P	Audio SWitching Pulse
A-MUTE	Audio MUTE
ANT	ANTenna
APC	Automatic Phase Control
ASSY	ASSemblY
BAL	BALance
B DOWN	Break DOWN
BGP	Burst Gate Pulse
BLK	BLocK or BLacK
BOP	Blank Output Pulse
BPF	Band Pass Filter
BU	Back Up (voltage)
B/W	Black and White
C	Chroma or Color
CCD	Charge Coupled Device
CCIR	Comité Consultatif International des Radio communications
CH (ch)	CHannel (channel)
CLK	CLocK
CM	Capstan Motor
CN	CoNnector
COMP	COMParator
CSW	Cassette SWitch
CSYNC	Composite SYNC
CTL	ConTrol
CUE	CUE
DAC	Digital to Analog Converter
DC	Direct Current
DEMOD	DEMODulator
DET	DETetct (DETector)
DL	Delay Line
DM	Drum Motor
DOC	Drop Out Compensator
D.P.E	Drum Phase Error
D.PG	Drum Pulse Generator
EE	Electronic to Electronic
EF	Emitter Follower
EMPHA	EMPHAsis
ENV	ENVelope
EP	Extended Play
EP ROM	Erasable Programmable ROM
EQ	EQualizer
FE	Full track Erase
FF	Flip-Flop or Fast Foward
FG	Frequency Generator
Fig	Figure
FLD	FLuorescent Display
FM	Frequency Modulation
Fo	resonance Frequency
FREQ	FREQuency
GND	GrouND
H	Horizontal
HP	Horizontal (sync) pulse
HPF	High Pass Filter
HQ	High Quality System
IC	Integrated Circuit
ID	IDentification
IDL	IDLe (Voltage)
IMS	Interactive Monitor System
INS	INSert
INV	INVerter
L	Left
LED	Light Emitting Diode
LIM	LIMitter
LM	Loading Motor
LM STP	Loading Motor STop
LP	Long Play
LPF	Low Pass Filter
ME-SECAM	Middle East SECAM
MI-COM	MIcro COMputer
MM	Mono-stayble Multi

ABBREVIATION	EXPLANATION
MOD	MODulator
MRS	Motor ReverSe
NAP	Ntsc Amusement Pal
NG	Noise Gate
NICAM	Near Instanteneous Compand Audio Multiplex
NON-LIN	NON-LINear
N.T.S.C.	National Television System Committee
OSC	OSCillator
PAL	Phase Alternation by Line
PB	Play Back
PCB (P.C.B)	Printed Circuit Board
P-COM	Phase-COMparator
P DOWN	Power DOWN
PG	Pulse Generator
P.I.P	Picture In Picture
PL, PLG	PLunger (PLunGer)
PRG (PGM)	PRoGram (ProGraM)
PU	Pick UP (head, pulse)
PWR	PoWeR
Q	Quality factor
R	Right
RAM	Random Access Memory
REC	RECord
REF	REFerence
REF-V	REFerence Vertical signal
REG	REGulator
REV (REVW)	REView (REVieW)
REW	REWind
RF	Radio Frequency
ROM	Read Only Memory
R.S SW	Record-Safety SWitch
RST (RES)	ReSet (RESet)
RVS	ReVerSe
S	Sensor, Shield
SAW	Surface Acoustic Wave
SC	SimulCast
S CLK	Serial CLocK
SECAM	SÉquentiel Couleur À Mémoire
S & H	Sample and Hold
SLP	Super Long Play
SP	Standard Play
SPD	SPeeD
SRP	Supply Reel Pulse
SRV	SeRVo
SOW	Sync On Word
STBY	STandBY
S.VHS	Super VHS
SW	SWitch
SW'NG	SWitchiNG
SWP	SWitching Pulse
SYNC	SYNChronize
T-AUDIO	Tuner AUDIO
TPZ (TRAPE)	TraPeZoid (TRAPEzoid)
TRK	TRacKing
TRP	Take up Reel Pulse
T/U	Take Up
TV	TeleVision
UHF	Ultra High Frequency
UNR	UNRegulated (voltage)
V	Vertical or Video
VASS	Video Address Search System
VCO	Voltage Controlled Oscillator
VH	Video Head
VHF	Very High Frequency
VHS	Video Home System
VIF	Video Intermediate Frequency
VISS	Video Index Search System
VJ	Video Judge
VM	Voltage for Memory
VOB	Video On Blank
VOW	Video On Word
VP	Vertical (sync) Pulse
VPS	Video Program System
VPT	Video Programming by video Text
VT	Voltage for Tuning
WHT	WHiTe
Y	Luminance
2H	2 Hour (SP)
4H	4 Hour (LP)
6H	6 Hour (SLP/EP)

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MODEL VS-G2100EA-D/EO-D/EOH-DN
MODEL VS-G2160EOH-VD
MODEL VS-G2200EK-VN/EOG-VD

SCHEMATIC DIAGRAMS AND PC BOARDS

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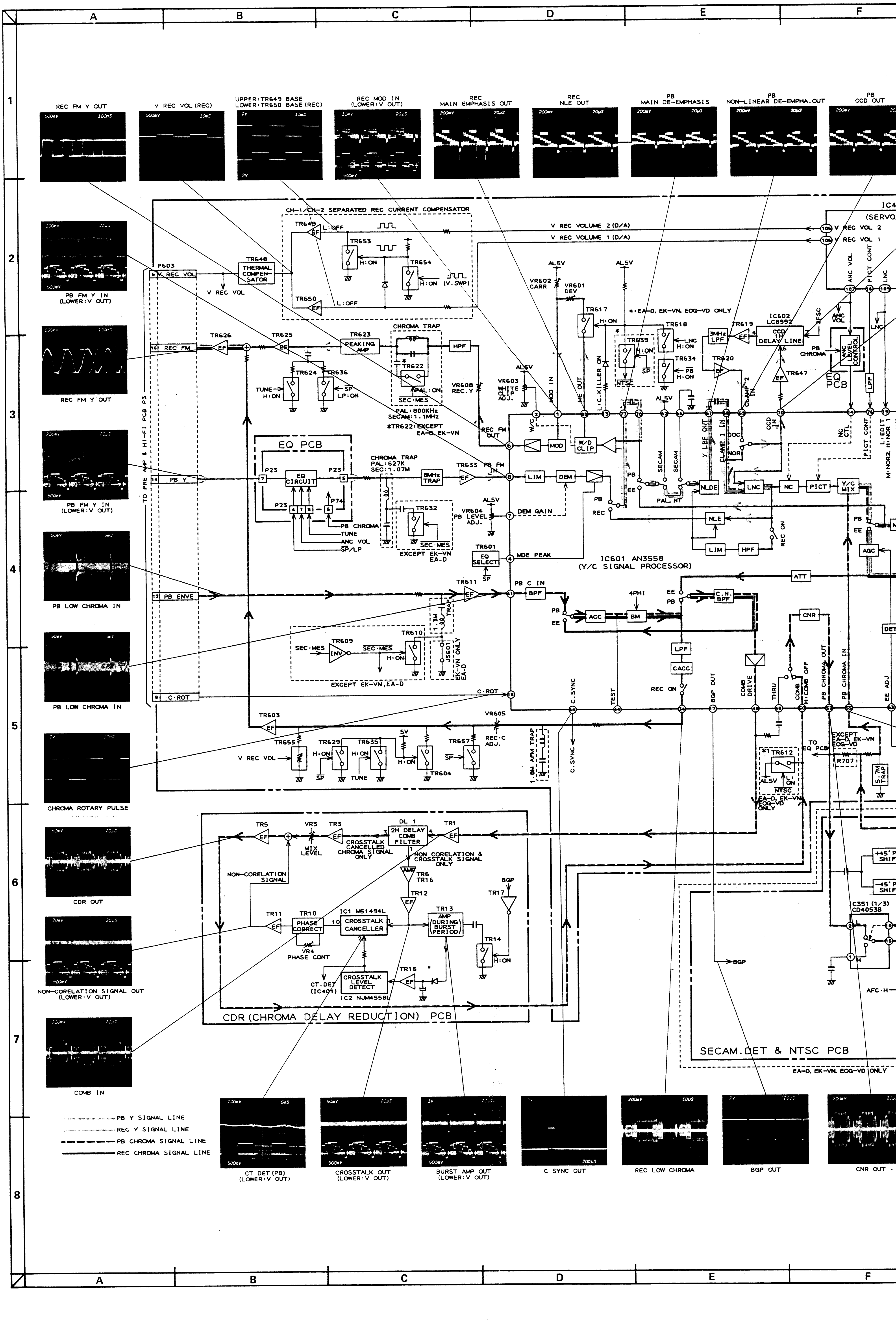
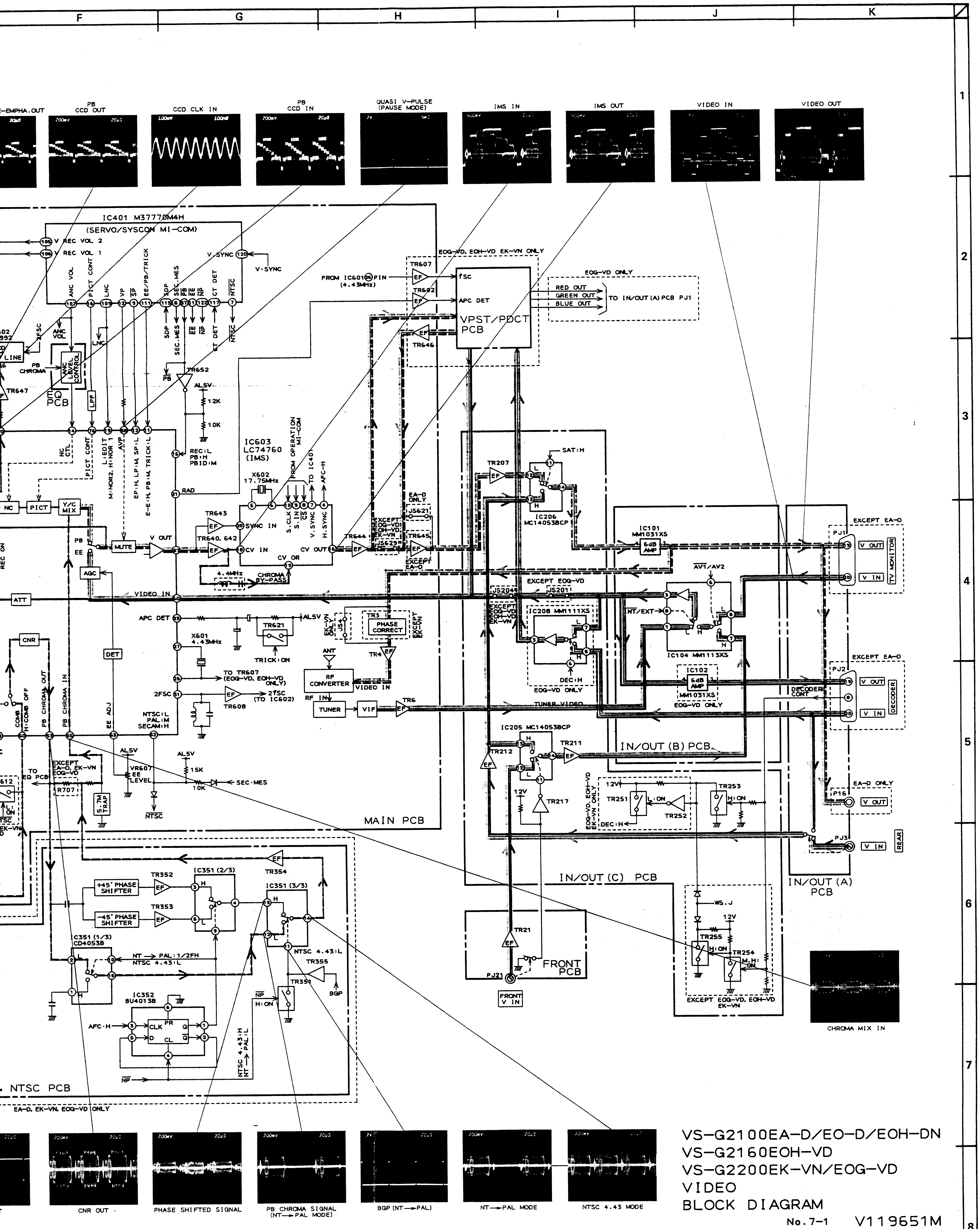
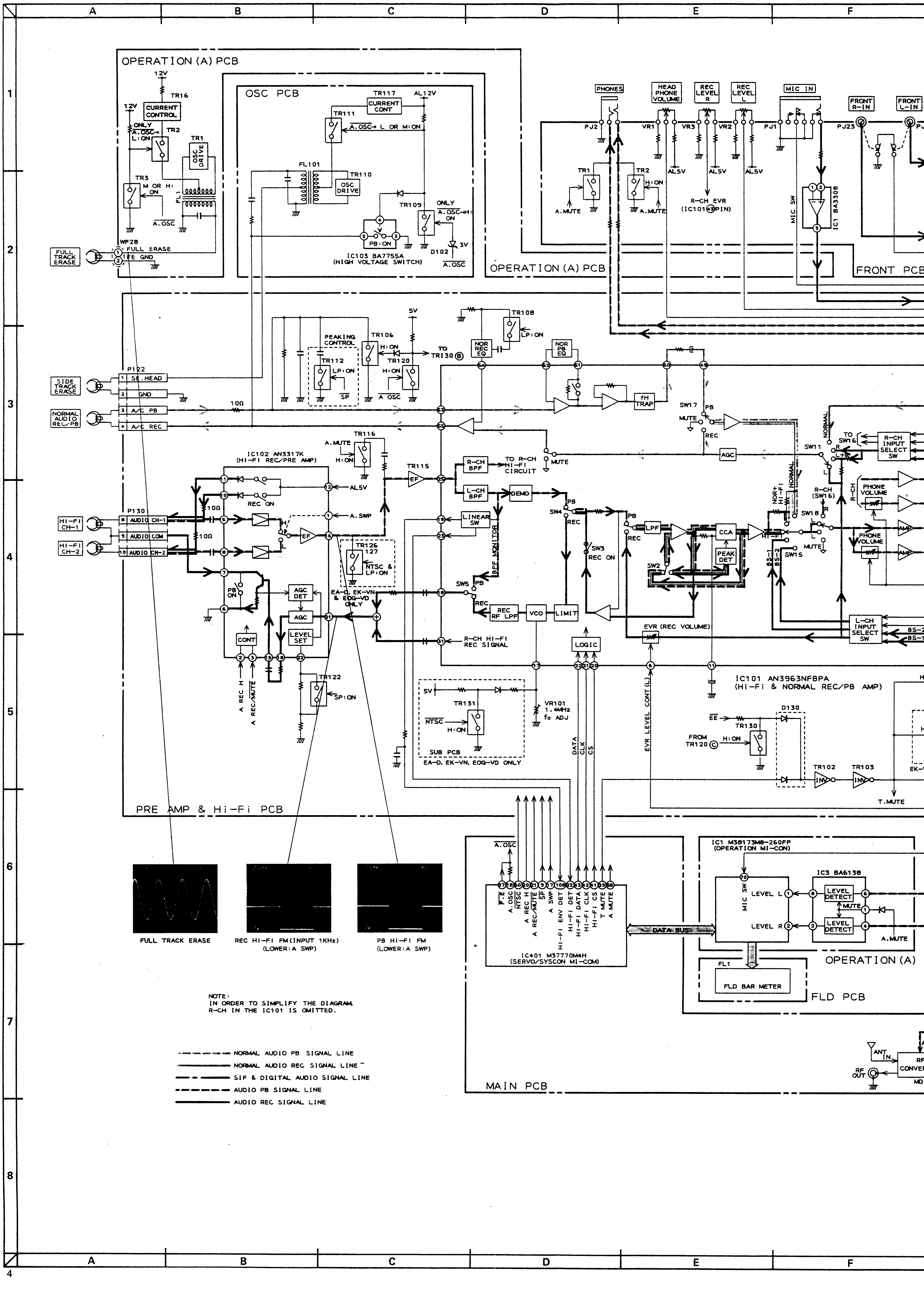
Use these schematic diagrams and PC boards together with the provided service manual.


A
B
C
D
E
F
1
2
3
4
5
6
7
8
REC FM Y OUT
V REC VOL (REC)
UPPER:TR649 BASE
LOWER:TR650 BASE (REC)
REC MOD IN
(LOWER:V OUT)
REC
MAIN EMPHASIS OUT
REC
NLE OUT
PB
MAIN DE-EMPHASIS
PB
NON-LINEAR DE-EMPHA.OUT
PB
CCD OUT
PB FM Y IN
(LOWER:V OUT)
REC FM Y OUT
PB FM Y IN
(LOWER:V OUT)
PB LOW CHROMA IN
PB LOW CHROMA IN
CHROMA ROTARY PULSE
CDR OUT
NON-CORELATION SIGNAL OUT
(LOWER:V OUT)
COMB IN
CT DET (PB)
(LOWER:V OUT)
CROSSTALK OUT
(LOWER:V OUT)
BURST AMP OUT
(LOWER:V OUT)
C SYNC OUT
REC LOW CHROMA
BGP OUT
CNR OUT
CH-1/CH-2 SEPARATED REC CURRENT COMPENSATOR
TR649
L:OFF
TR653
TR654
H:ON
H:ON (V.SWP)
TR650
L:OFF
TR648
THERMAL COMPEN-SATOR
P603
V REC VOL
V REC VOL
V REC VOLUME 2 (D/A)
V REC VOLUME 1 (D/A)
IC4
(SERVO
V REC VOL 2
V REC VOL 1
ANC VOL
PICT CONT
LNC
TO PRE AMP & HI-FI PCB P3
REC FM
TR626
EF
TR625
TR623
PEAKING AMP
CHROMA TRAP
TR622
HPF
PAL:ON
SEC·MES
PAL:800KHz
SECAM:1.1MHz
*TR622:EXCEPT EA-D, EK-VN
TR624
TR636
TUNE H:ON
SP LP:ON
VR608 REC.Y
VR603 WHITE CLIP ADJ.
AL5V
VR602 CARR
VR601 DEV
TR617
H:ON
*:EA-D, EK-VN, EOG-VD ONLY
TR618
TR639
H:ON
NTSC
SP
LNC H:ON
TR634
PB H:ON
3MHz LPF
TR619
IC602 LC8992
CCD 1H DELAY LINE
2FSC
PB CHROMA
ANC LEVEL CONTROL
ANC VOL
LNC
TR620
TR647
EQ PCB
LPF
MOD IN
ME OUT
L:C.KILLER ON
CLAMP 2 IN
CCD IN
NC CTL
PICT CONT
L:EDIT H:NOR2, H:NOR 1
REC FM OUT
W/C
MOD
W/D CLIP
DOC
NOR
EQ PCB
P23
EQ CIRCUIT
P74
PB CHROMA
TUNE
ANC VOL
SP/LP
CHROMA TRAP
PAL:627K
SEC:1.07M
8MHz TRAP
TR633
PB FM IN
LIM
DEM
SECAM
SECAM
Y LPF OUT
CLAMP 1 IN
PB
EE
PAL, NT
NLDE
LNC
NC
PICT
Y/C MIX
TR632
SEC·MES
EXCEPT EK-VN EA-D
VR604 PB LEVEL ADJ.
DEM GAIN
PB
REC
NLE
LIM
HPF
REC ON
PB
EE
AGC
TR601
EQ SELECT
SP
MDE PEAK
IC601 AN3558
(Y/C SIGNAL PROCESSOR)
TR611
PB ENVE
PB C IN
BPF
1.3M TRAP
ATT
EE
PB
C.N. BPF
4PHI
PB
EE
ACC
BM
CNR
DET
TR609
SEC·MES
INV
SEC·MES
TR610
H:ON
JSE01
EK-VN ONLY EA-D
EXCEPT EK-VN, EA-D
LPF
CACC
REC ON
C.SYNC
TEST
BGP OUT
COMB DRIVE
THRU
COMB H:COMB OFF
PB CHROMA OUT
PB CHROMA IN
EE ADJ
C·ROT
C·ROT
TR603
VR605
REC·C ADJ.
5V
TR655
TR629
TR635
H:ON
H:ON
H:ON
TR657
V REC VOL
SP
TUNE
SP
TR604
1.8M AFM TRAP
C.SYNC
TO EQ PCB
EXCEPT EA-D, EK-VN EOG-VD
R707
*1 TR612
AL5V
L:ON
NTSC
EA-D, EK-VN EOG-VD ONLY
5.7M TRAP
DL 1
2H DELAY COMB FILTER
TR5
VR3
TR3
TR1
MIX LEVEL
CROSSTALK CANCELLED CHROMA SIGNAL ONLY
NON CORELATION & CROSSTALK SIGNAL ONLY
NON-CORELATION SIGNAL
AMP
TR6
TR16
TR12
EF
BGP
TR17
TR11
TR10
PHASE CORRECT
IC1 M51494L
CROSSTALK CANCELLER
TR13
AMP (DURING BURST PERIOD)
TR14
H:ON
VR4
PHASE CONT
CT.DET (IC401)
CROSSTALK LEVEL DETECT
IC2 NJM4558L
TR15
CDR (CHROMA DELAY REDUCTION) PCB
BGP
+45° P SHIF
-45° P SHIF
C351 (1/3) CD4053B
H
AFC·H
SECAM.DET & NTSC PCB
EA-D, EK-VN, EOG-VD ONLY
PB Y SIGNAL LINE
REC Y SIGNAL LINE
PB CHROMA SIGNAL LINE
REC CHROMA SIGNAL LINE


F
G
H
I
J
K
1
2
3
4
5
6
7
8
PB CCD OUT
CCD CLK IN
PB CCD IN
QUASI V-PULSE (PAUSE MODE)
IMS IN
IMS OUT
VIDEO IN
VIDEO OUT
IC401 M37770M4H
(SERVO/SYSCON MI-COM)
V REC VOL 2
V REC VOL 1
V.SYNC
ANC VOL
PICT CONT
LNC
VP
SP
EE/PB/TRICK
SDP
SEC.MES
PB
EE
NP
CT DET
NTSC
EQ PCB
ANC LEVEL CONTROL
PB CHROMA
TR647
LPF
TR652
AL5V
12K
10K
REC:L PB:H PBID:M
IC603 LC74760 (IMS)
FROM OPERATION MI-COM
X602 17.75MHz
SYNC IN
S.CLK
S.IN
CS
V.SYNC
H.SYNC
TO IC401
AFC-H
CV IN
CV OUT
CV OR
CHROMA BY-PASS
4.4MHz
TR643
TR640, 642
TR644
TR645
JS621
EA-D ONLY
EXCEPT EOG-VD, EOH-VD, EK-VN
JS629
EXCEPT EA-D
NC
PICT
Y/C MIX
MUTE
V OUT
AGC
ATT
VIDEO IN
APC DET
TR621
TRICK:ON
X601 4.43MHz
TO TR607 (EOG-VD, EOH-VD ONLY)
2FSC
2fsc (TO IC602)
TR608
NTSC:L PAL:M SECAM:H
DET
CNR
EE ADJ
PB CHROMA IN
PB CHROMA OUT
COMB H:COMB OFF
AL5V
VR607 EE LEVEL
15K
10K
SEC.MES
5.7M TRAP
EXCEPT EA-D, EK-VN EOG-VD
TO EQ PCB
R707
MAIN PCB
EOG-VD, EOH-VD EK-VN ONLY
TR607
FROM IC601 PIN (4.43MHz)
fsc
TR602
APC DET
VPST/PDCT PCB
TR646
EOG-VD ONLY
RED OUT
GREEN OUT
BLUE OUT
TO IN/OUT (A) PCB PJ1
JS4
EK-VN
TR3 PHASE CORRECT
EXCEPT EK-VN
TR4
ANT
RF CONVERTER
VIDEO IN
RF IN
TUNER
VIF
TR6
EXCEPT EOG-VD
JS204
JS201
TR207
SAT:H
IC206 MC14053BCP
IC208 MM1111XS
EXCEPT EOG-VD EOH-VD EK-VN
DEC:H
EOG-VD ONLY
IC101 MM1031XS
6dB AMP
AV1/AV2
NT/EXT
IC104 MM1113XS
IC102 6dB AMP MM1031XS
EOG-VD ONLY
TUNER VIDEO
DECODER CONT
EXCEPT EA-D
PJ1
V OUT
V IN
TV MONITOR
PJ2
DECODER
IC205 MC14053BCP
TR212
TR211
TR217
IN/OUT (B) PCB
12V
TR251
L:ON
TR252
TR253
H:ON
EOG-VD, EOH-VD EK-VN ONLY
DEC:H
EA-D ONLY
P16
PJ3
REAR
IN/OUT (C) PCB
IN/OUT (A) PCB
TR21
FRONT PCB
PJ21
FRONT V IN
WS.J
TR255
TR254
M.H: ON
EXCEPT EOG-VD, EOH-VD EK-VN
CHROMA MIX IN
TR354
IC351 (2/3)
IC351 (3/3)
TR352
+45° PHASE SHIFTER
TR353
-45° PHASE SHIFTER
IC351 (1/3) CD4053B
NT → PAL:1/2FH
NTSC 4.43:L
NTSC 4.43:L
TR355
TR351
BGP
NP
H:ON
IC352 BU4013B
AFC.H
CLK
PR
D
CL
Q
NTSC 4.43:H NT → PAL:L
NTSC PCB
EA-D, EK-VN, EOG-VD ONLY
CNR OUT
PHASE SHIFTED SIGNAL
PB CHROMA SIGNAL (NT → PAL MODE)
BGP (NT → PAL)
NT → PAL MODE
NTSC 4.43 MODE

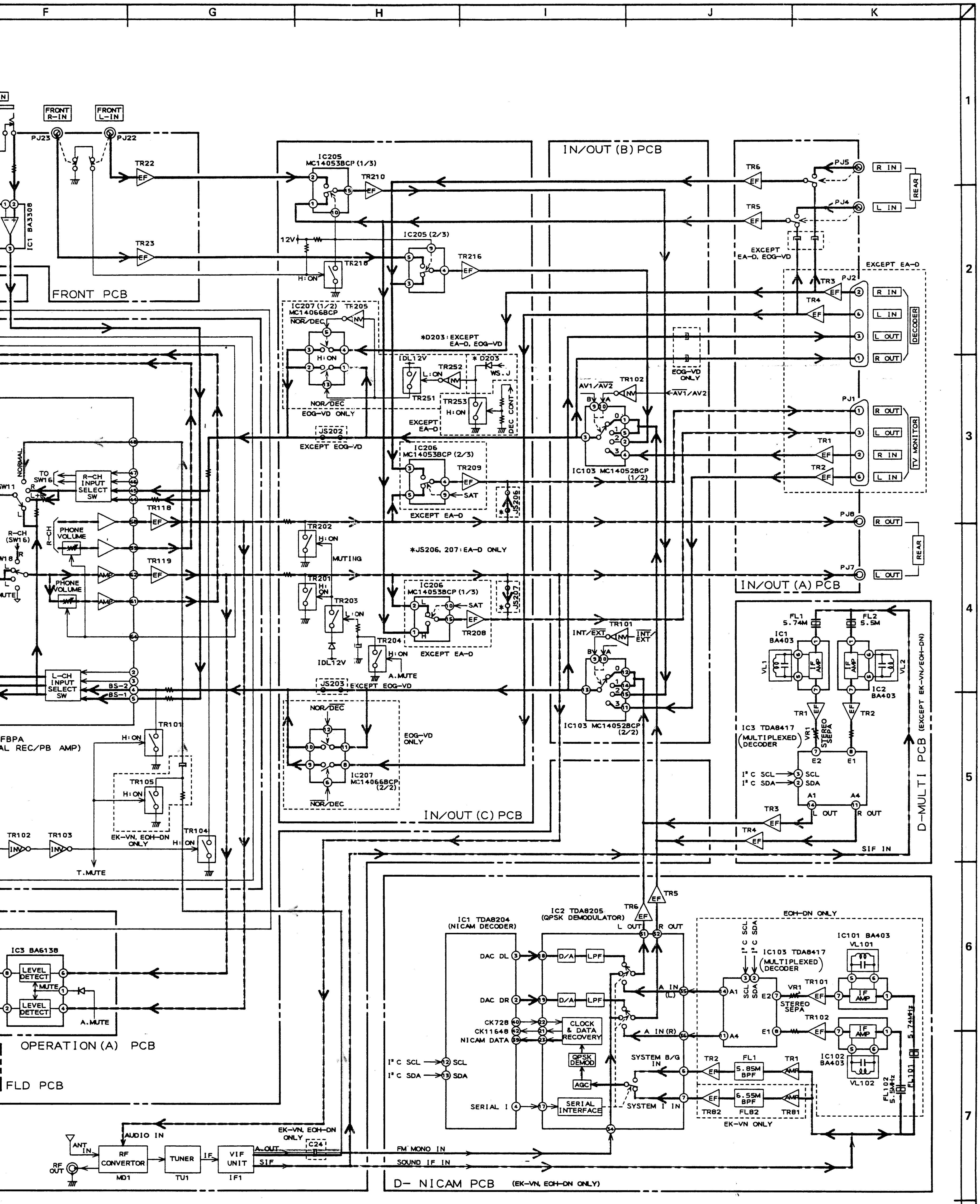
VS-G2100EA-D/EO-D/EOH-DN
VS-G2160EOH-VD
VS-G2200EK-VN/EOG-VD
VIDEO
BLOCK DIAGRAM

No.7-1 V119651M
A1

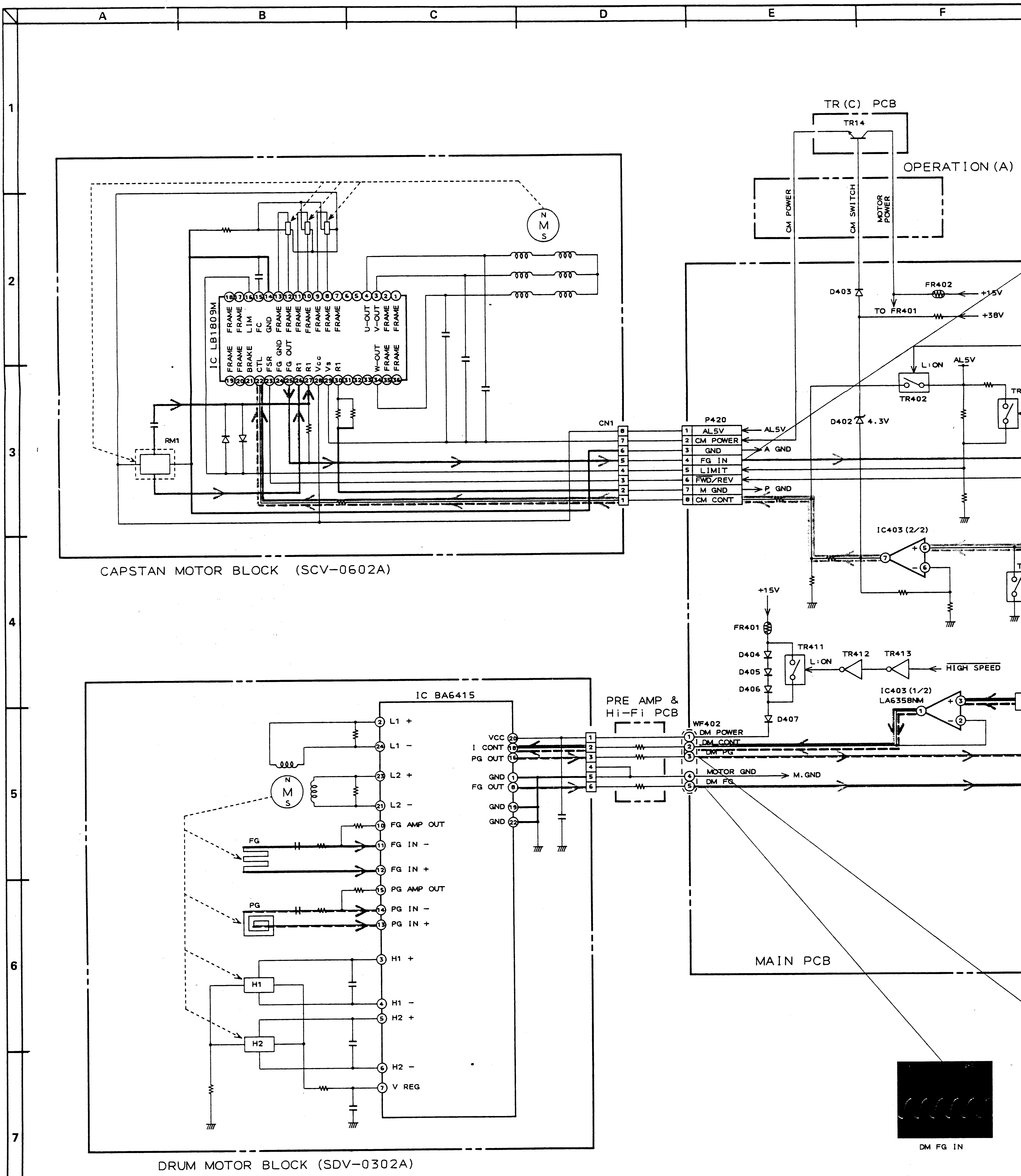

A
B
C
D
E
F
1
2
3
4
5
6
7
8
OPERATION (A) PCB
12V
TR16
CURRENT CONTROL
ONLY A.OSC→ L:ON
TR2
TR1
OSC DRIVE
TR3
M OR H: ON
FL1
A.OSC
OSC PCB
TR117
AL12V
CURRENT CONT
TR111
A.OSC→ L OR M:ON
FL101
TR110
OSC DRIVE
TR109
ONLY A.OSC→H: ON
D102
3V
PB:ON
IC103 BA7755A (HIGH VOLTAGE SWITCH)
WF28
FULL ERASE
FE GND
FULL TRACK ERASE
PHONES
HEAD PHONE VOLUME
REC LEVEL R
REC LEVEL L
MIC IN
FRONT R-IN
FRONT L-IN
PJ2
VR1
VR3
VR2
PJ1
PJ23
A.MUTE
H:ON
AL5V
R-CH EVR (IC101 43 PIN)
MIC SW
IC1 BA3308
OPERATION (A) PCB
FRONT PCB
5V
TR108
LP:ON
PEAKING CONTROL
TR106
H:ON
TO TR130 Ⓑ
TR112
LP:ON
SP
TR120
H:ON
A OSC
NOR REC EQ
NOR PB EQ
fH TRAP
SW17
PB
MUTE
REC
P122
SIDE TRACK ERASE
SE.HEAD
GND
NORMAL AUDIO REC/PB
A/C PB
A/C REC
10Ω
TR116
A.MUTE
H:ON
IC102 AN3317K (HI-FI REC/PRE AMP)
AL5V
REC ON
TR115
EF
R-CH BPF
TO R-CH HI-FI CIRCUIT
L-CH BPF
DEMO
MUTE
AGC
NORMAL
TO SW16
R-CH INPUT SELECT SW
SW11
R
L+R
L
NOR+ HI-FI
R-CH (SW16)
PHONE VOLUME
P130
HI-FI CH-1
HI-FI CH-2
AUDIO CH-1
AUDIO COM
AUDIO CH-2
10Ω
A. SWP
LINEAR SW
BPF MONITOR
SW4
PB
REC
SW3 REC ON
LPF
CCA
PEAK DET
SW2
SW18
SW15
MUTE
BS-1
BS-2
HI-FI
TR126 127
NTSC & LP:ON
EA-D, EK-VN & EOG-VD ONLY
PB ON
AGC DET
AGC
LEVEL SET
CONT
SW5
REC RF LPF
VCO
LIMIT
R-CH HI-FI REC SIGNAL
EVR (REC VOLUME)
L-CH INPUT SELECT SW
LOGIC
A REC H
A REC/MUTE
TR122
SP:ON
5V
TR131
NTSC
H:ON
SUB PCB
EA-D, EK-VN, EOG-VD ONLY
VR101 1.4MHz fo ADJ
DATA
CLK
CS
EVR LEVEL CONT (L)
IC101 AN3963NFBPA (Hi-Fi & NORMAL REC/PB AMP)
EE
TR130
FROM TR120 Ⓒ
H:ON
D130
TR102
TR103
INV
T.MUTE
PRE AMP & Hi-Fi PCB
A.OSC
F.E
A.OSC
NTSC H
A REC H
A REC/MUTE
SP
A SWP
HI-FI ENV DET
HI-FI DATA
HI-FI CLK
HI-FI CS
T MUTE
A MUTE
IC401 M37770M4H (SERVO/SYSCON MI-COM)
DATA BUS
IC1 M38173M8-260FP (OPERATION MI-CON)
MIC SW
LEVEL L
LEVEL R
IC3 BA6138
LEVEL DETECT
MUTE
A.MUTE
OPERATION (A)
FL1
FLD BAR METER
FLD PCB
ANT IN
RF OUT
MAIN PCB
FULL TRACK ERASE
REC HI-FI FM(INPUT 1KHz) (LOWER:A SWP)
PB HI-FI FM (LOWER:A SWP)

NOTE:
IN ORDER TO SIMPLIFY THE DIAGRAM,
R-CH IN THE IC101 IS OMITTED.

NORMAL AUDIO PB SIGNAL LINE
NORMAL AUDIO REC SIGNAL LINE
SIF & DIGITAL AUDIO SIGNAL LINE
AUDIO PB SIGNAL LINE
AUDIO REC SIGNAL LINE

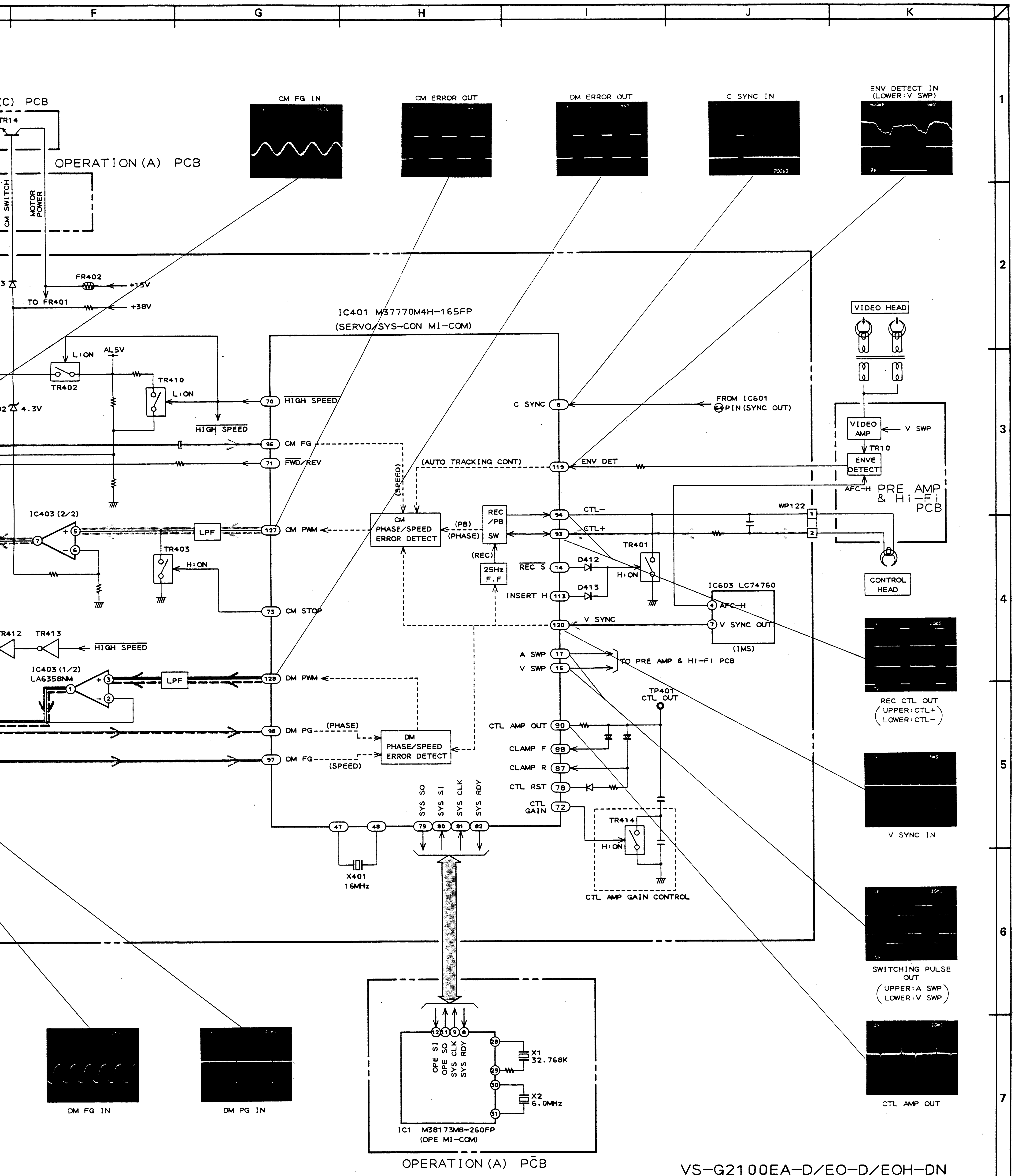

F
G
H
I
J
K
1
2
3
4
5
6
7
8
FRONT R-IN
FRONT L-IN
PJ23
PJ22
TR22
TR23
EF
IC1 BA3308
FRONT PCB
IC205 MC14053BCP (1/3)
TR210
IC205 (2/3)
12V
TR218
H: ON
TR216
IN/OUT (B) PCB
TR6
TR5
PJ5
PJ4
R IN
L IN
REAR
EXCEPT EA-D, EOG-VD
EXCEPT EA-D
TR3
TR4
PJ2
R IN
L IN
L OUT
R OUT
DECODER
IC207 (1/2) MC14066BCP
TR205
NOR/DEC
*D203: EXCEPT EA-D, EOG-VD
IDL12V
TR252
*D203
WS.J
L: ON
TR251
TR253
DEC CONT
EXCEPT EA-D
EOG-VD ONLY
JS202
EXCEPT EOG-VD
EOG-VD ONLY
AV1/AV2
TR102
BV VA
IC103 MC14052BCP (1/2)
PJ1
R OUT
L OUT
R IN
L IN
TV MONITOR
TR1
TR2
NORMAL
TO SW16
R-CH INPUT SELECT SW
SW11
R-CH (SW16)
TR118
PHONE VOLUME
AMP
TR119
IC206 MC14053BCP (2/3)
TR209
SAT
EXCEPT EA-D
*JS206
TR202
MUTING
*JS206, 207: EA-D ONLY
PJ8
PJ7
R OUT
L OUT
REAR
IN/OUT (A) PCB
TR201
TR203
IC206 MC14053BCP (1/3)
TR208
*JS207
TR204
IDL12V
A. MUTE
EXCEPT EA-D
TR101
INT/EXT
IC103 MC14052BCP (2/2)
L-CH INPUT SELECT SW
BS-2
BS-1
JS203
EXCEPT EOG-VD
NOR/DEC
IC207 MC14066BCP (2/2)
EOG-VD ONLY
IN/OUT (C) PCB
FBPA
AL REC/PB AMP)
TR101
TR105
EK-VN, EOH-DN ONLY
TR102
TR103
TR104
T. MUTE
FL1 5.74M
FL2 5.5M
IC1 BA403
IC2 BA403
VL1
VL2
IF AMP
IC3 TDA8417 (MULTIPLEXED DECODER)
VR1
STEREO SEPA
E2
E1
I²C SCL
I²C SDA
A1
A4
L OUT
R OUT
TR3
TR4
SIF IN
D-MULTI PCB (EXCEPT EK-VN/EOH-DN)
TR5
TR6
IC3 BA6138
LEVEL DETECT
MUTE
A. MUTE
OPERATION (A) PCB
FLD PCB
IC1 TDA8204 (NICAM DECODER)
IC2 TDA8205 (QPSK DEMODULATOR)
DAC DL
DAC DR
CK728
CK11648
NICAM DATA
SCL
SDA
SERIAL I
D/A
LPF
CLOCK & DATA RECOVERY
QPSK DEMOD
AGC
SERIAL INTERFACE
A IN (L)
A IN (R)
SYSTEM B/G IN
SYSTEM I IN
EOH-DN ONLY
IC103 TDA8417 (MULTIPLEXED DECODER)
IC101 BA403
VL101
TR101
TR102
IC102 BA403
VL102
FL1 5.85M BPF
FL82 6.55M BPF
TR82
TR81
EK-VN ONLY
FL101 5.74MHz
FL102 5.5MHz
ANT IN
RF OUT
AUDIO IN
RF CONVERTOR
MD1
TUNER
TU1
IF
VIF UNIT
IF1
A. OUT
SIF
EK-VN, EOH-DN ONLY
C24
FM MONO IN
SOUND IF IN
D- NICAM PCB (EK-VN, EOH-DN ONLY)

VS-G2100EA-D/EO-D/EOH-DN
VS-G2160EOH-VD
VS-G2200EK-VN/EOG-VD
AUDIO
BLOCK DIAGRAM
No.7-2 V119652M
A1


A
B
C
D
E
F
1
2
3
4
5
6
7
TR (C) PCB
TR14
OPERATION (A)
CM POWER
CM SWITCH
MOTOR POWER
D403
FR402
+15V
TO FR401
+38V
L:ON
AL5V
TR402
D402
4.3V
N
M
S
IC LB1809M
FRAME
LIM
FC
GND
BRAKE
CTL
FSR
FG GND
FG OUT
R1
Vcc
Vs
U-OUT
V-OUT
W-OUT
RM1
CN1
P420
AL5V
CM POWER
GND
FG IN
LIMIT
FWD/REV
M GND
CM CONT
A GND
P GND
IC403 (2/2)
CAPSTAN MOTOR BLOCK (SCV-0602A)
+15V
FR401
D404
D405
D406
D407
TR411
L:ON
TR412
TR413
HIGH SPEED
IC403 (1/2)
LA6358NM
IC BA6415
L1 +
L1 -
L2 +
L2 -
VCC
I CONT
PG OUT
GND
FG OUT
FG AMP OUT
FG IN -
FG IN +
PG AMP OUT
PG IN -
PG IN +
FG
PG
H1 +
H1 -
H2 +
H2 -
V REG
H1
H2
PRE AMP & Hi-Fi PCB
WF402
DM POWER
DM CONT
DM PG
MOTOR GND
DM FG
M.GND
MAIN PCB
DM FG IN
DRUM MOTOR BLOCK (SDV-0302A)

NOTE:
1. PHOTOGRAPHS EXCEPT [REC CTL OUT] WERE TAKEN DURING PB MODE.
2. EXCEPT [REC CTL OUT], [ENV DETECT IN] AND [SWITCHING PULSE OUT], PHOTOGRAPH'S SECOND LINE FROM THE BOTTOM IS DC 0V.

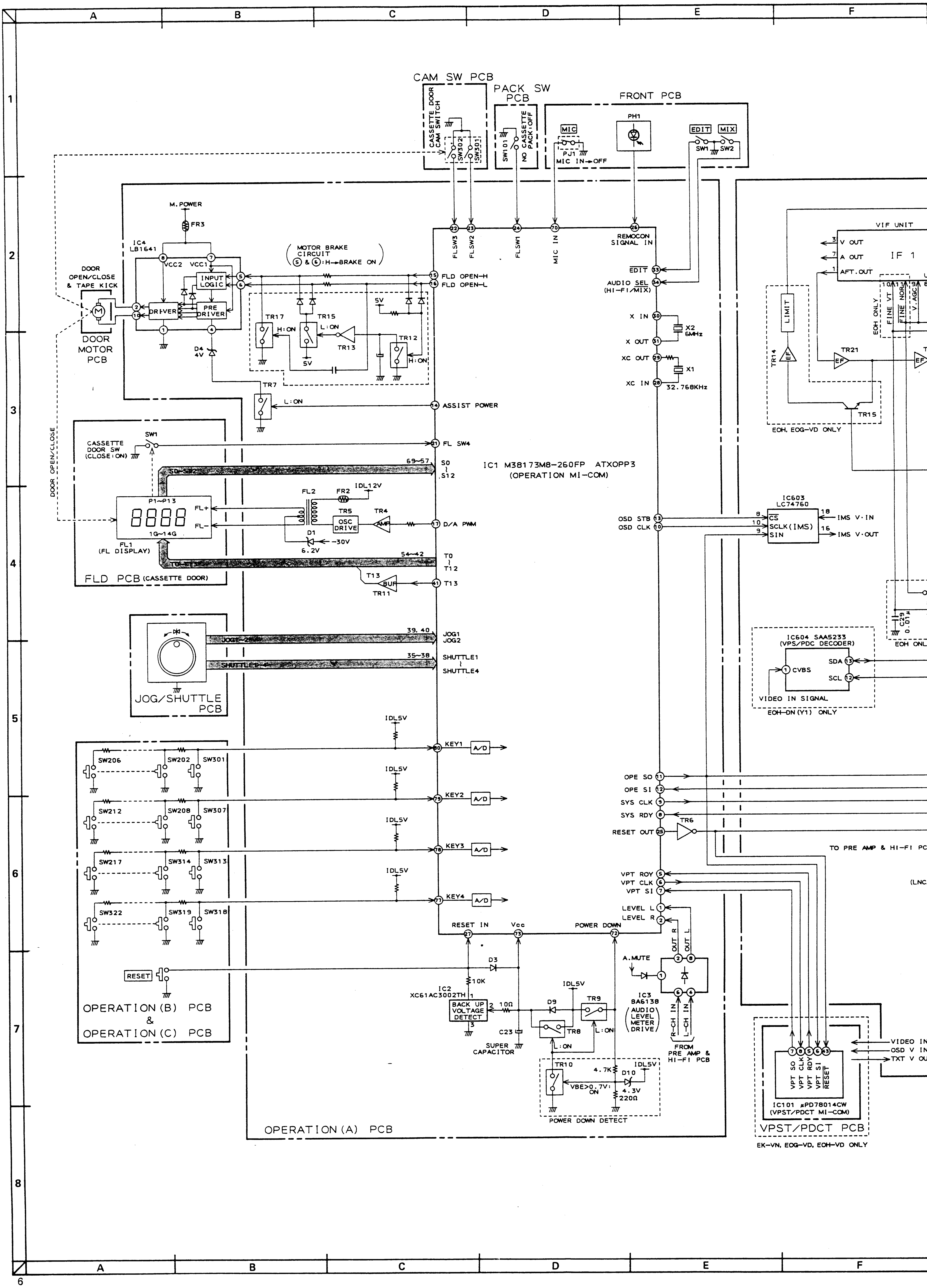
: CAPSTAN
: CAPSTAN
: DRUM MO
: DRUM MO


F
G
H
I
J
K
1
2
3
4
5
6
7
8
(C) PCB
TR14
OPERATION (A) PCB
CM SWITCH
MOTOR POWER
CM FG IN
CM ERROR OUT
DM ERROR OUT
C SYNC IN
ENV DETECT IN (LOWER: V SWP)
FR402
+15V
TO FR401
+38V
IC401 M37770M4H-165FP
(SERVO/SYS-CON MI-COM)
L:ON
AL5V
TR402
TR410
L:ON
4.3V
70 HIGH SPEED
HIGH SPEED
96 CM FG
71 FWD/REV
IC403 (2/2)
LPF
127 CM PWM
TR403
H:ON
73 CM STOP
TR412
TR413
HIGH SPEED
IC403 (1/2)
LA6358NM
LPF
128 DM PWM
98 DM PG
97 DM FG
(PHASE)
(SPEED)
DM PHASE/SPEED ERROR DETECT
(SPEED)
(AUTO TRACKING CONT)
CM PHASE/SPEED ERROR DETECT
(PB)
(PHASE)
REC /PB SW
(REC)
25Hz F.F
C SYNC 8
FROM IC601 64 PIN (SYNC OUT)
119 ENV DET
94 CTL-
93 CTL+
REC S 14
INSERT H 113
D412
D413
H:ON
TR401
IC603 LC74760
4 AFC-H
7 V SYNC OUT
(IMS)
120 V SYNC
A SWP 17
V SWP 15
TO PRE AMP & HI-FI PCB
TP401 CTL OUT
CTL AMP OUT 90
CLAMP F 88
CLAMP R 87
CTL RST 78
CTL GAIN 72
TR414
H:ON
CTL AMP GAIN CONTROL
SYS SO
SYS SI
SYS CLK
SYS RDY
79
80
81
82
47
48
X401 16MHz
VIDEO HEAD
VIDEO AMP
V SWP
TR10
ENVE DETECT
AFC-H
PRE AMP & Hi-Fi PCB
WP122
1
2
CONTROL HEAD
REC CTL OUT (UPPER: CTL+ LOWER: CTL-)
V SYNC IN
SWITCHING PULSE OUT (UPPER: A SWP LOWER: V SWP)
CTL AMP OUT
DM FG IN
DM PG IN
OPE SI
OPE SO
SYS CLK
SYS RDY
12
11
9
8
28
29
30
31
X1 32.768K
X2 6.0MHz
IC1 M38173M8-260FP
(OPE MI-COM)
OPERATION (A) PCB

———— :CAPSTAN MOTOR SPEED CONTROL LINE
- - - - :CAPSTAN MOTOR PHASE CONTROL LINE
———— :DRUM MOTOR SPEED CONTROL LINE
— — — :DRUM MOTOR PHASE CONTROL LINE

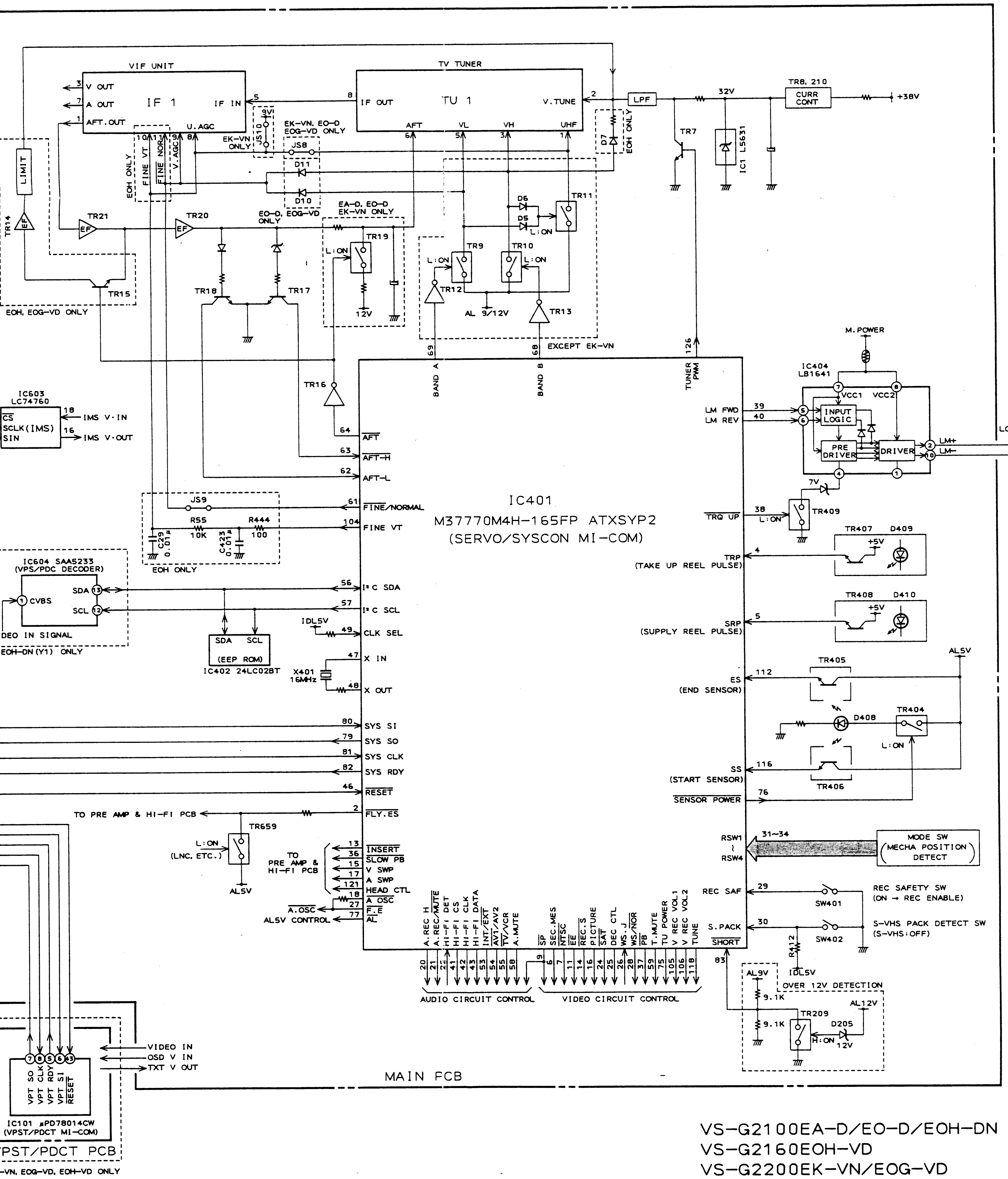
VS-G2100EA-D/EO-D/EOH-DN
VS-G2160EOH-VD
VS-G2200EK-VN/EOG-VD
SERVO
BLOCK DIAGRAM

No.7-3 V119653M
A1


A
B
C
D
E
F
1
2
3
4
5
6
7
8
CAM SW PCB
CASSETTE DOOR CAM SWITCH
SW302
SW301
PACK SW PCB
SW101
NO CASSETTE PACK:OFF
FRONT PCB
MIC
PJ1
MIC IN→OFF
PH1
EDIT
MIX
SW1
SW2
M.POWER
FR3
IC4 LB1641
VCC2
VCC1
INPUT LOGIC
PRE DRIVER
DRIVER
D4 4V
DOOR OPEN/CLOSE & TAPE KICK
DOOR MOTOR PCB
MOTOR BRAKE CIRCUIT ⑤ & ⑥:H→BRAKE ON
TR17
H:ON
TR15
L:ON
TR13
TR12
H:ON
5V
TR7
L:ON
FLSW3
FLSW2
FLSW1
MIC IN
REMOCON SIGNAL IN
FLD OPEN-H
FLD OPEN-L
EDIT
AUDIO SEL (HI-FI/MIX)
X IN
X OUT
XC OUT
XC IN
X2 6MHz
X1 32.768KHz
ASSIST POWER
DOOR OPEN/CLOSE
CASSETTE DOOR SW (CLOSE:ON)
SW1
FL SW4
S0~S12
69~57
S0~S12
IC1 M38173M8-260FP ATXOPP3 (OPERATION MI-COM)
P1~P13
FL+
FL-
1G~14G
FL1 (FL DISPLAY)
FL2
FR2
IDL12V
TR5
OSC DRIVE
TR4
AMP
D/A PWM
D1
6.2V
-30V
T0~T12
54~42
T13
BUF
TR11
FLD PCB (CASSETTE DOOR)
JOG1~2
39, 40
JOG1
JOG2
SHUTTLE1~4
35~38
SHUTTLE1 ~ SHUTTLE4
JOG/SHUTTLE PCB
IDL5V
KEY1
KEY2
KEY3
KEY4
A/D
SW206
SW202
SW301
SW212
SW208
SW307
SW217
SW314
SW313
SW322
SW319
SW318
RESET
OPERATION (B) PCB & OPERATION (C) PCB
RESET IN
Vcc
POWER DOWN
D3
10K
IC2 XC61AC3002TH
BACK UP VOLTAGE DETECT
10Ω
C23
SUPER CAPACITOR
D9
TR9
TR8
L:ON
TR10
L:ON
VBE>0.7V: ON
4.7K
D10
4.3V
220Ω
IDL5V
POWER DOWN DETECT
OPERATION (A) PCB
OSD STB
OSD CLK
IC603 LC74760
CS
SCLK(IMS)
SIN
IMS V·IN
IMS V·OUT
OPE SO
OPE SI
SYS CLK
SYS RDY
RESET OUT
TR6
TO PRE AMP & HI-FI PC
VPT RDY
VPT CLK
VPT SI
LEVEL L
LEVEL R
OUT R
OUT L
A.MUTE
IC3 BA6138 (AUDIO LEVEL METER DRIVE)
R-CH IN
L-CH IN
FROM PRE AMP & HI-FI PCB
VPT SO
VPT CLK
VPT RDY
VPT SI
RESET
IC101 μPD78014CW (VPST/PDCT MI-COM)
VPST/PDCT PCB
EK-VN, EOG-VD, EOH-VD ONLY
VIDEO IN
OSD V IN
TXT V OUT
VIF UNIT
V OUT
A OUT
AFT.OUT
IF 1
FINE VT
FINE NOR
V.AGC
EOH ONLY
LIMIT
TR14
EF
TR21
TR15
EOH, EOG-VD ONLY
C29 0.01μ
EOH ONL
IC604 SAA5233 (VPS/PDC DECODER)
CVBS
SDA
SCL
VIDEO IN SIGNAL
EOH-ON (Y1) ONLY
(LNC

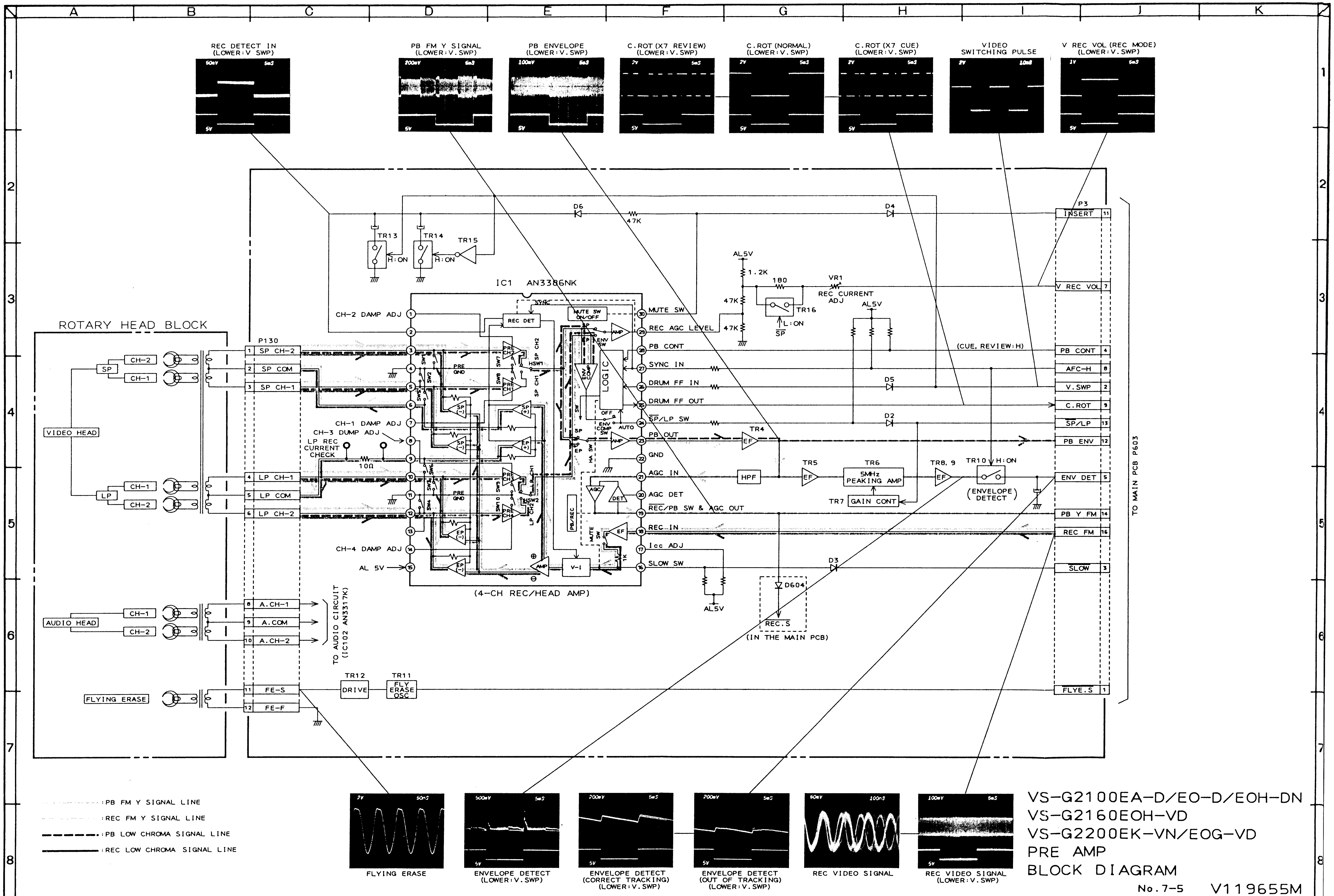
MODE SWITCH TRUTH TABLE

MODE / OUTPUT	EJECT	STOP (TAPE LOADED)	PAUSE/PLAY	PLAY	REVIEW	CUE	FF	REW	POWER OFF (WITH CASSETTE)
RSW 4	H (5V)	H	H	H	H	H	L	L	H
RSW 3	H (5V)	L	H	L	H	L	L	L	L
RSW 2	L	H	H	H	L	H	H	H	L
RSW 1	L	H	L	H	H	H	H	L	H


VIF UNIT
IF 1
V OUT
A OUT
AFT.OUT
IF IN
U.AGC
FINE VT
FINE NOR
V.AGC
EOH ONLY
LIMIT
TR14
TR21
TR20
TR15
EOH, EOG-VD ONLY
TV TUNER
TU 1
IF OUT
AFT
VL
VH
UHF
V.TUNE
JS10
9V
EK-VN ONLY
EK-VN, EO-D EOG-VD ONLY
JS8
D11
D10
EO-D, EOG-VD ONLY
EA-D, EO-D EK-VN ONLY
TR19
L:ON
12V
TR18
TR17
D7
EOH ONLY
D6
D5
L:ON
TR11
TR9
TR10
L:ON
TR12
TR13
AL 9/12V
EXCEPT EK-VN
LPF
32V
TR8, 210
CURR CONT
+38V
TR7
IC1 L5631
TR16
IC603 LC74760
CS
SCLK(IMS)
SIN
IMS V·IN
IMS V·OUT
JS9
R55 10K
R444 100
C29 0.01μ
C423 0.01μ
EOH ONLY
IC604 SAA5233 (VPS/PDC DECODER)
CVBS
SDA
SCL
DEO IN SIGNAL
EOH-DN (Y1) ONLY
SDA
SCL
(EEP ROM)
IC402 24LC02BT
IDL5V
X401 16MHz
IC401
M37770M4H-165FP ATXSYP2
(SERVO/SYSCON MI-COM)
BAND A
BAND B
TUNER PWM
AFT
AFT-H
AFT-L
FINE/NORMAL
FINE VT
I²C SDA
I²C SCL
CLK SEL
X IN
X OUT
SYS SI
SYS SO
SYS CLK
SYS RDY
RESET
FLY.ES
TO PRE AMP & HI-FI PCB
TR659
L:ON (LNC, ETC.)
AL5V
TO PRE AMP & HI-FI PCB
INSERT
SLOW PB
V SWP
A SWP
HEAD CTL
A OSC
F.E
AL
A.OSC
AL5V CONTROL
A.REC H
A.REC/MUTE
HI-FI DET
HI-FI CS
HI-FI CLK
HI-FI DATA
INT/EXT
AV1/AV2
TV/VCR
A.MUTE
SP
SEC.MES
NTSC
EE
REC.S
PICTURE
SAT
DEC CTL
WS.J
WS/NOR
PB
T.MUTE
TU POWER
V REC VOL1
V REC VOL2
TUNE
AUDIO CIRCUIT CONTROL
VIDEO CIRCUIT CONTROL
M.POWER
IC404 LB1641
VCC1
VCC2
INPUT LOGIC
PRE DRIVER
DRIVER
LM FWD
LM REV
LM+
LM−
LOADING MOTOR
7V
TRQ UP
L:ON
TR409
TR407
D409
+5V
TRP (TAKE UP REEL PULSE)
TR408
D410
+5V
SRP (SUPPLY REEL PULSE)
ES (END SENSOR)
TR405
AL5V
D408
TR404
L:ON
SS (START SENSOR)
TR406
SENSOR POWER
RSW1 ~ RSW4
MODE SW (MECHA POSITION DETECT)
REC SAF
REC SAFETY SW (ON → REC ENABLE)
SW401
S.PACK
S-VHS PACK DETECT SW (S-VHS:OFF)
SW402
SHORT
R412
IDL5V
AL9V
OVER 12V DETECTION
9.1K
9.1K
TR209
AL12V
D205
H:ON
12V
MAIN PCB
VIDEO IN
OSD V IN
TXT V OUT
VPT SO
VPT CLK
VPT RDY
VPT SI
RESET
IC101 μPD78014CW (VPST/PDCT MI-COM)
VPST/PDCT PCB
-VN, EOG-VD, EOH-VD ONLY

VS-G2100EA-D/EO-D/EOH-DN
VS-G2160EOH-VD
VS-G2200EK-VN/EOG-VD
OPERATION & SYSCON
BLOCK DIAGRAM

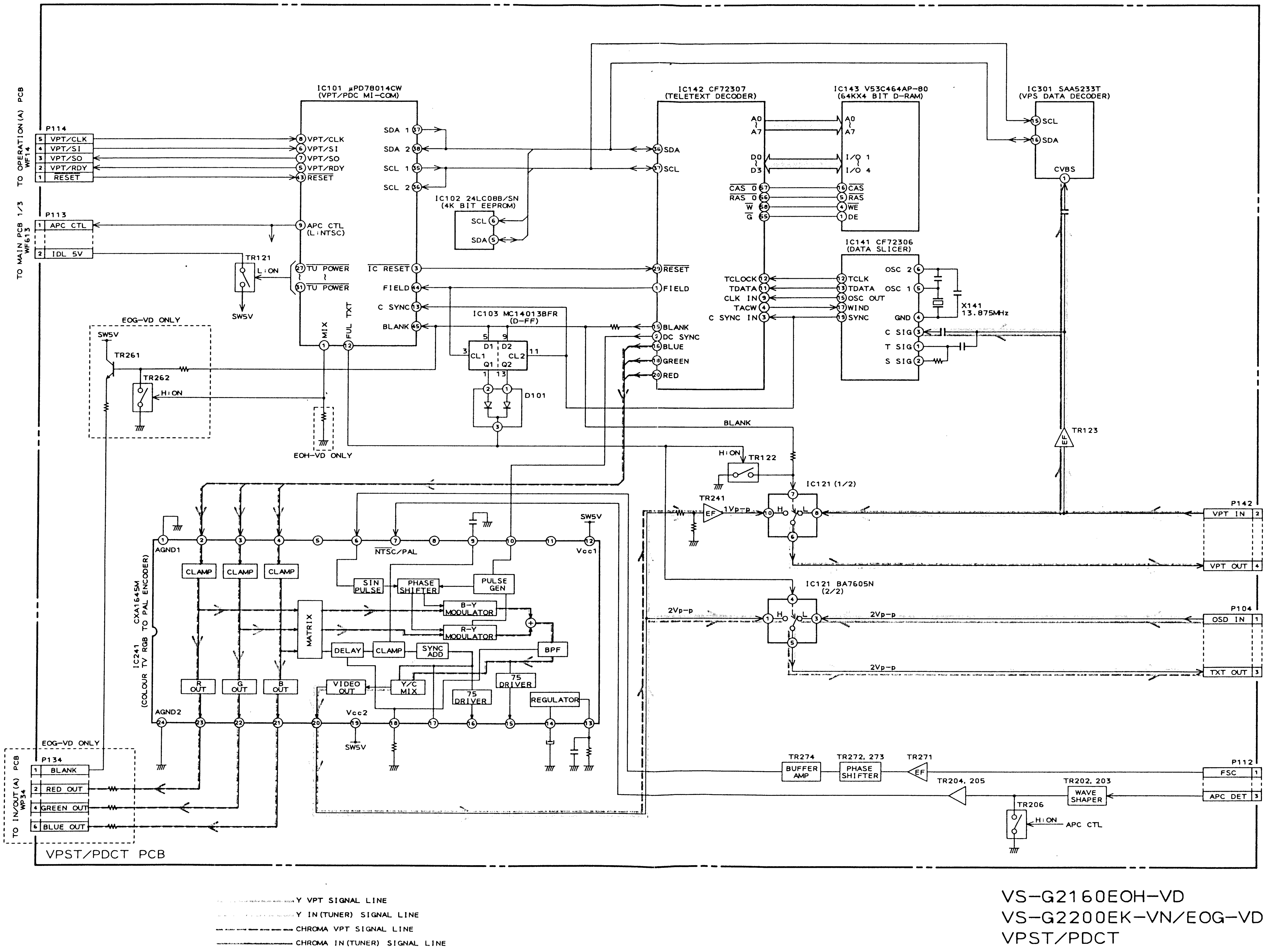
No.7-4 V119654M
A1



A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
8
REC DETECT IN (LOWER:V SWP)
PB FM Y SIGNAL (LOWER:V.SWP)
PB ENVELOPE (LOWER:V.SWP)
C.ROT (X7 REVIEW) (LOWER:V.SWP)
C.ROT (NORMAL) (LOWER:V.SWP)
C.ROT (X7 CUE) (LOWER:V.SWP)
VIDEO SWITCHING PULSE
V REC VOL (REC MODE) (LOWER:V.SWP)
ROTARY HEAD BLOCK
VIDEO HEAD
AUDIO HEAD
FLYING ERASE
SP
LP
CH-1
CH-2
P130
1 SP CH-2
2 SP COM
3 SP CH-1
4 LP CH-1
5 LP COM
6 LP CH-2
8 A.CH-1
9 A.COM
10 A.CH-2
11 FE-S
12 FE-F
TO AUDIO CIRCUIT (IC102 AN3317K)
TR12 DRIVE
TR11 FLY ERASE OSC
TR13
TR14
TR15
H:ON
D6
47K
D4
IC1 AN3386NK
(4-CH REC/HEAD AMP)
CH-2 DAMP ADJ
CH-1 DAMP ADJ
CH-3 DUMP ADJ
LP REC CURRENT CHECK
10Ω
CH-4 DAMP ADJ
AL 5V
REC DET
MUTE SW ON/OFF
SYNC
LOGIC
ENV COMP
ENV SW
AMP
PRE CH1
PRE CH2
PRE CH3
PRE CH4
PRE GND
SP (+)
SP (-)
EP (+)
EP (-)
HSW1
HSW2
SW1
SW2
SW3
SW4
SW5
SW6
SW7
SW8
SW9
SW10
PB/REC
MUTE SW
EF
V-I
AGC
DET
OFF
AUTO
HA SW
1K
MUTE SW
REC AGC LEVEL
PB CONT
SYNC IN
DRUM FF IN
DRUM FF OUT
SP/LP SW
PB OUT
GND
AGC IN
AGC DET
REC/PB SW & AGC OUT
REC IN
Icc ADJ
SLOW SW
AL5V
1.2K
180
VR1
REC CURRENT ADJ
47K
TR16
L:ON
SP
D5
D2
D3
TR4
EF
TR5
TR6
5MHz PEAKING AMP
HPF
TR7
GAIN CONT
TR8, 9
TR10
(ENVELOPE DETECT)
(CUE, REVIEW:H)
D604
REC.S
(IN THE MAIN PCB)
P3
INSERT 11
V REC VOL 7
PB CONT 4
AFC-H 8
V.SWP 2
C.ROT 9
SP/LP 13
PB ENV 12
ENV DET 5
PB Y FM 14
REC FM 16
SLOW 3
FLYE.S 1
TO MAIN PCB P603
:PB FM Y SIGNAL LINE
:REC FM Y SIGNAL LINE
:PB LOW CHROMA SIGNAL LINE
:REC LOW CHROMA SIGNAL LINE
FLYING ERASE
ENVELOPE DETECT (LOWER:V.SWP)
ENVELOPE DETECT (CORRECT TRACKING) (LOWER:V.SWP)
ENVELOPE DETECT (OUT OF TRACKING) (LOWER:V.SWP)
REC VIDEO SIGNAL
REC VIDEO SIGNAL (LOWER:V.SWP)

VS-G2100EA-D/EO-D/EOH-DN
VS-G2160EOH-VD
VS-G2200EK-VN/EOG-VD
PRE AMP
BLOCK DIAGRAM

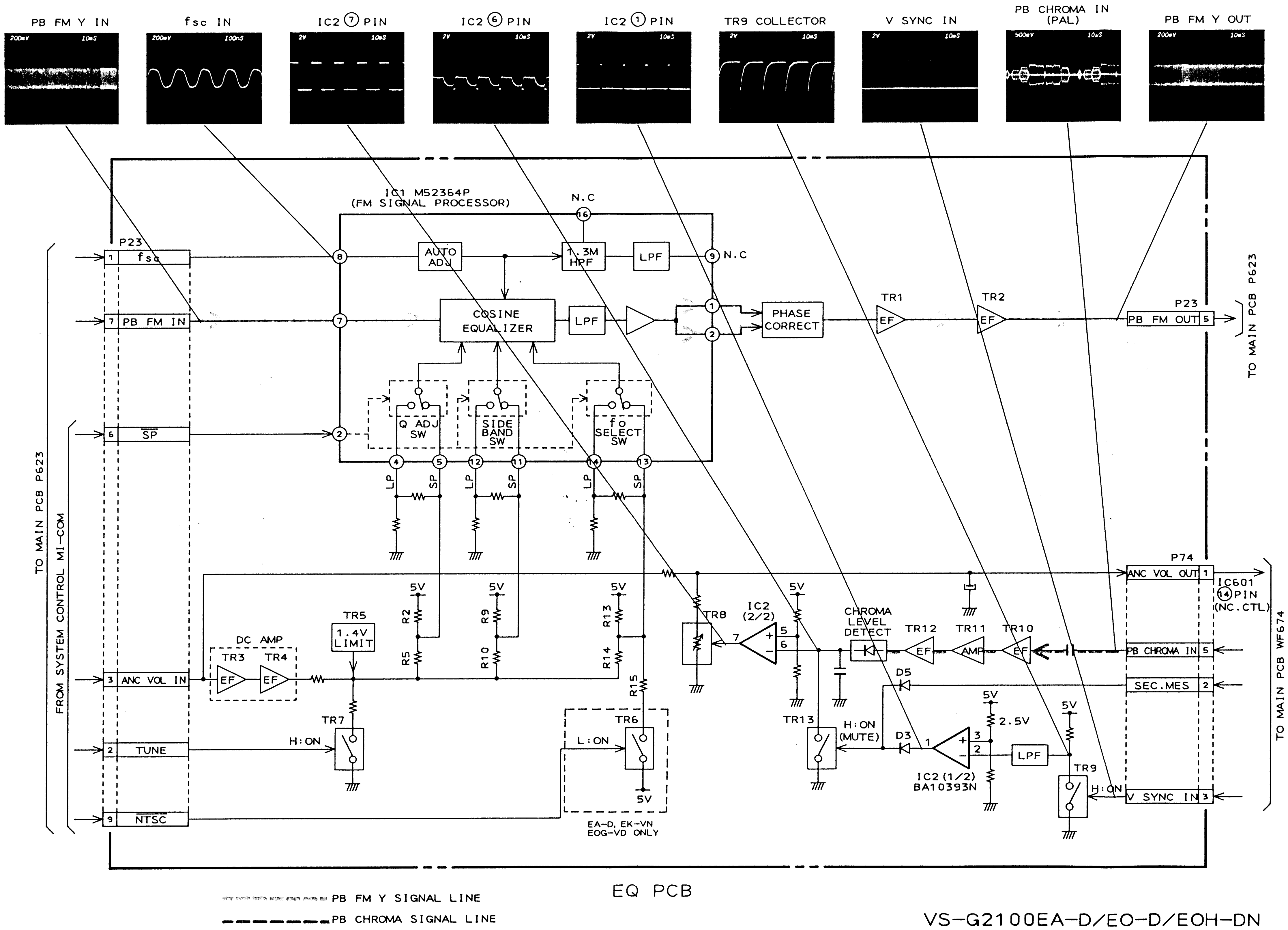
No.7-5 V119655M
A2


TO OPERATION (A) PCB WF14
P114
5 VPT/CLK
4 VPT/SI
3 VPT/SO
2 VPT/RDY
1 RESET
TO MAIN PCB 1/3 WF613
P113
1 APC CTL
2 IDL 5V
IC101 μPD78014CW (VPT/PDC MI-COM)
8 VPT/CLK
6 VPT/SI
7 VPT/SO
5 VPT/RDY
43 RESET
9 APC CTL (L:NTSC)
27 TU POWER ~ 31 TU POWER
SDA 1 37
SDA 2 38
SCL 1 35
SCL 2 36
IC RESET 3
FIELD 44
C SYNC 13
BLANK 45
MIX 1
FUL TXT 12
TR121
L:ON
SW5V
IC102 24LC08B/SN (4K BIT EEPROM)
SCL 6
SDA 5
IC103 MC14013BFR (D-FF)
5 9 D1 D2 3 CL1 CL2 11 Q1 Q2 1 13
D101
EOG-VD ONLY
SW5V
TR261
TR262
H:ON
EOH-VD ONLY
IC142 CF72307 (TELETEXT DECODER)
36 SDA
37 SCL
A0 ~ A7
D0 ~ D3
CAS 0 57
RAS 0 56
W 58
G 55
29 RESET
1 FIELD
TCLOCK 12
TDATA 11
CLK IN 9
TACW 4
C SYNC IN 3
15 BLANK
2 DC SYNC
16 BLUE
18 GREEN
20 RED
IC143 V53C464AP-80 (64KX4 BIT D-RAM)
A0 ~ A7
I/O 1 ~ I/O 4
16 CAS
5 RAS
4 WE
1 DE
IC141 CF72306 (DATA SLICER)
12 TCLK
13 TDATA
15 OSC OUT
17 WIND
19 SYNC
OSC 2 6
OSC 1 5
GND 4
C SIG 3
T SIG 1
S SIG 2
X141 13.875MHz
IC301 SAA5233T (VPS DATA DECODER)
15 SCL
16 SDA
CVBS 1
TR123 EF
BLANK
H:ON TR122
IC121 (1/2)
TR241 EF 1Vp-p
10 H L 8 7 6
IC121 BA7605N (2/2)
2Vp-p
1 H L 3 4 5
2Vp-p
2Vp-p
P142
VPT IN 2
VPT OUT 4
TO IN/OUT (C) PCB WP342
P104
OSD IN 1
TXT OUT 3
TO MAIN PCB 1/3 WP604
IC241 CXA1645M (COLOUR TV RGB TO PAL ENCODER)
1 AGND1
2 3 4 5 6 7 NTSC/PAL 8 9 10 11 12 Vcc1
SW5V
CLAMP
CLAMP
CLAMP
SIN PULSE
PHASE SHIFTER
PULSE GEN
B-Y MODULATOR
R-Y MODULATOR
MATRIX
DELAY
CLAMP
SYNC ADD
BPF
R OUT
G OUT
B OUT
VIDEO OUT
Y/C MIX
75 DRIVER
75 DRIVER
REGULATOR
24 AGND2 23 22 21 20 19 Vcc2 18 17 16 15 14 13
SW5V
EOG-VD ONLY
P134
1 BLANK
2 RED OUT
4 GREEN OUT
6 BLUE OUT
TO IN/OUT (A) PCB WP34
TR274 BUFFER AMP
TR272, 273 PHASE SHIFTER
TR271 EF
TR204, 205
TR202, 203 WAVE SHAPER
TR206
H:ON APC CTL
P112
FSC 1
APC DET 3
TO MAIN PCB 1/3 WF612
VPST/PDCT PCB
Y VPT SIGNAL LINE
Y IN (TUNER) SIGNAL LINE
CHROMA VPT SIGNAL LINE
CHROMA IN (TUNER) SIGNAL LINE

VS-G2160EOH-VD
VS-G2200EK-VN/EOG-VD
VPST/PDCT
BLOCK DIAGRAM

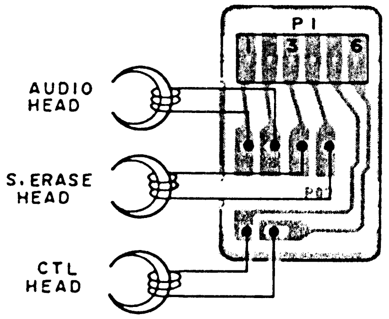
No.7-6 V119455M

A2

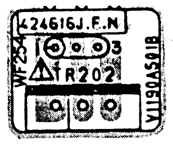

PB FM Y IN
fsc IN
IC2 ⑦ PIN
IC2 ⑥ PIN
IC2 ① PIN
TR9 COLLECTOR
V SYNC IN
PB CHROMA IN (PAL)
PB FM Y OUT
IC1 M52364P (FM SIGNAL PROCESSOR)
N.C
AUTO ADJ
1.3M HPF
LPF
COSINE EQUALIZER
PHASE CORRECT
TR1 EF
TR2 EF
P23
1 fsc
7 PB FM IN
6 SP
3 ANC VOL IN
2 TUNE
9 NTSC
PB FM OUT 5
TO MAIN PCB P623
Q ADJ SW
SIDE BAND SW
fo SELECT SW
LP SP
R2 R5 R9 R10 R13 R14 R15
5V
DC AMP
TR3 EF
TR4 EF
TR5 1.4V LIMIT
TR7 H:ON
TR6 L:ON
EA-D, EK-VN EOG-VD ONLY
TR8
IC2 (2/2)
CHROMA LEVEL DETECT
TR12 EF
TR11 AMP
TR10 EF
TR13
H:ON (MUTE)
D3 D5
2.5V
IC2 (1/2) BA10393N
TR9 H:ON
P74
ANC VOL OUT 1
IC601 ⑭ PIN (NC.CTL)
PB CHROMA IN 5
SEC.MES 2
V SYNC IN 3
TO MAIN PCB WF674
FROM SYSTEM CONTROL MI-COM
TO MAIN PCB P623
EQ PCB
PB FM Y SIGNAL LINE
PB CHROMA SIGNAL LINE

VS-G2100EA-D/EO-D/EOH-DN
VS-G2160EOH-VD
VS-G2200EK-VN/EOG-VD
EQ PCB
BLOCK DIAGRAM

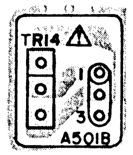
No.7-7 V119659M
A3


P1
3
6
AUDIO HEAD
S.ERASE HEAD
P01
CTL HEAD

A / C HEAD PCB
V1102B5120(J1)


424616J.F.N
WF254
1
3
TR202
V1190A501B

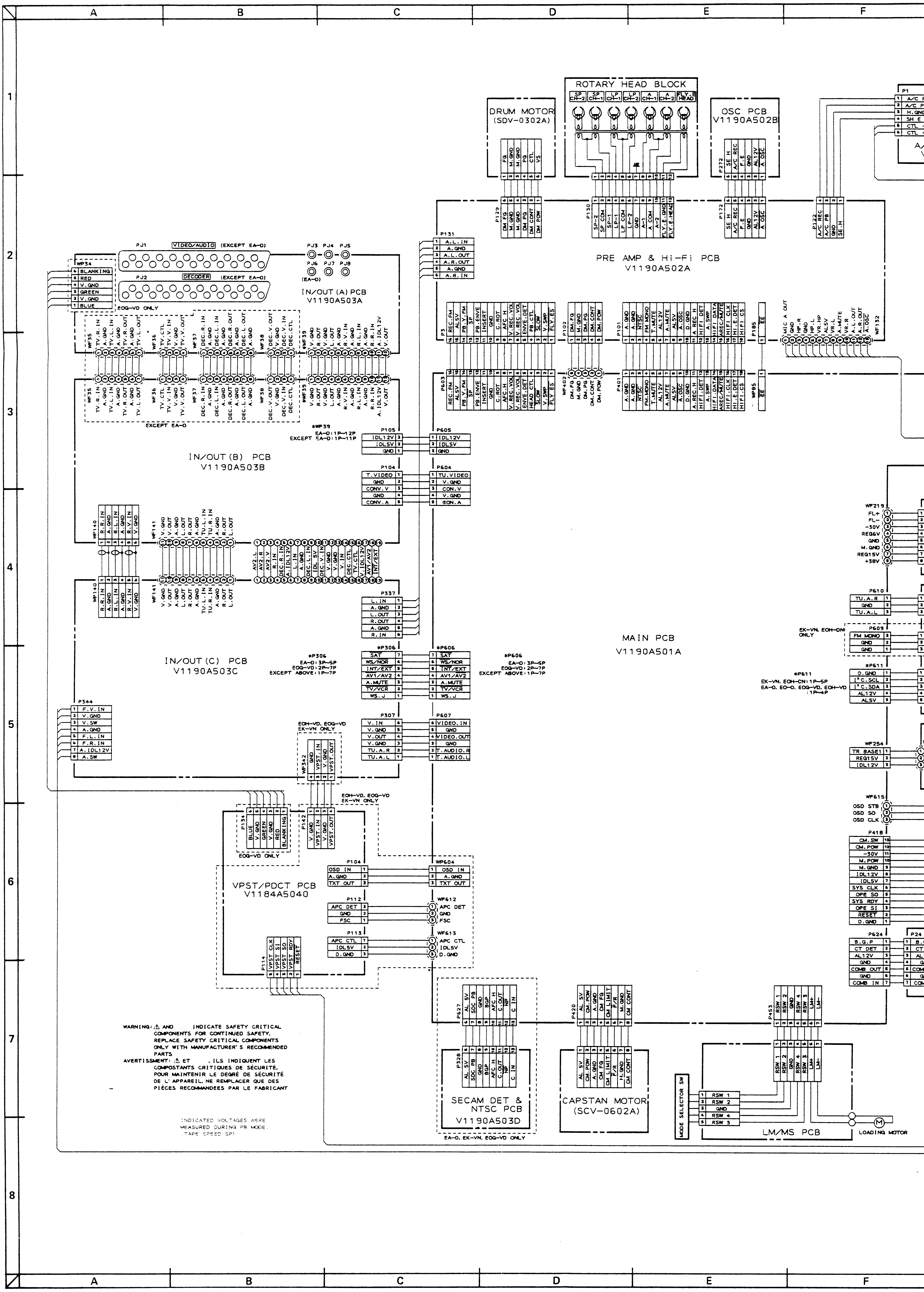
TR(A)PCB
V1190A501B


TR14
1
3
A501B

TR(C) PCB
V1196A501BJ1

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY,
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS

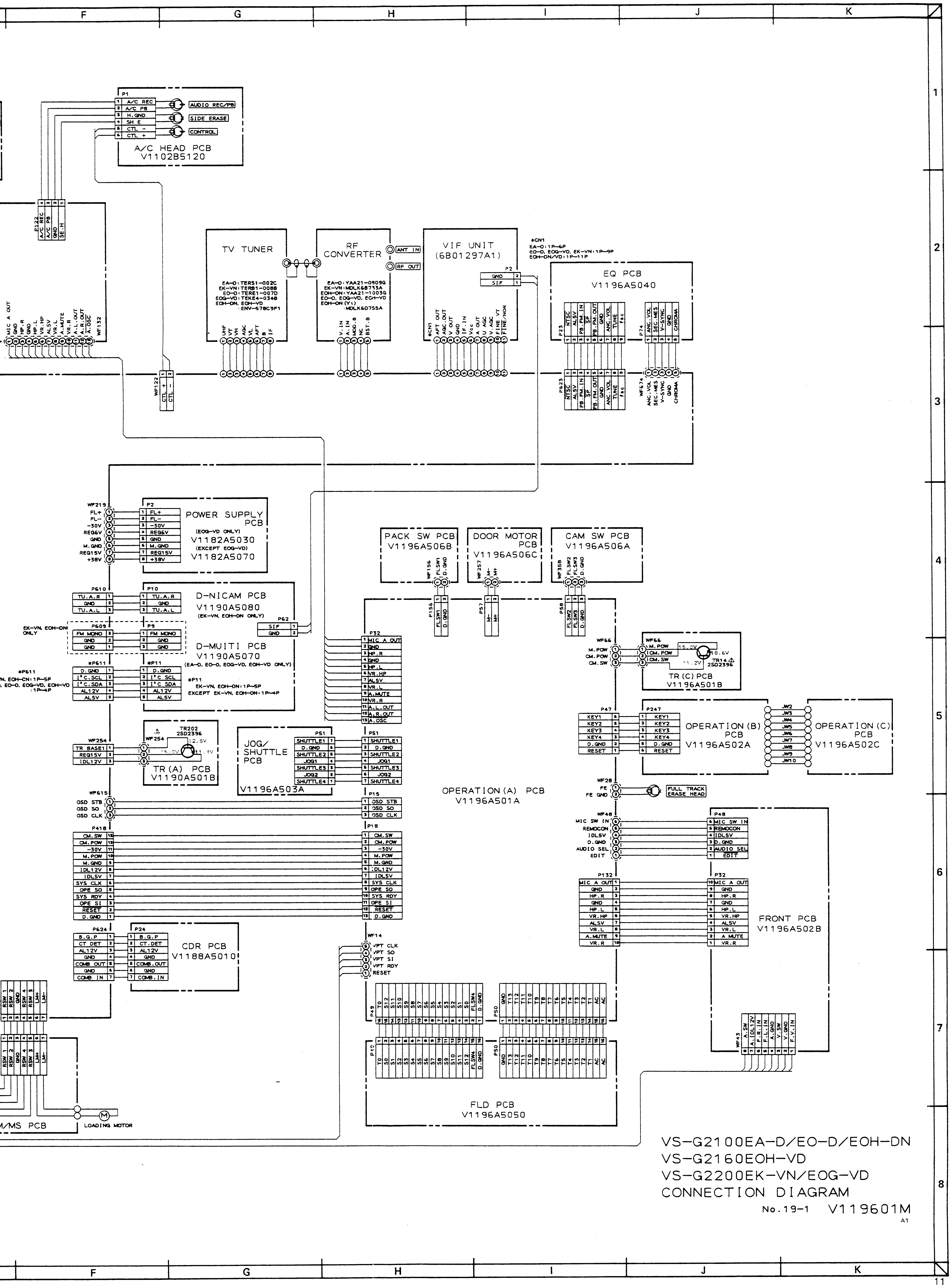
AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL,
NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT


ROTARY HEAD BLOCK
SP CH-2
SP CH-1
LP CH-1
LP CH-2
A CH-1
A CH-2
FLY.E HEAD
DRUM MOTOR
(SDV-0302A)
OSC PCB
V1190A502B
P129
P130
P172
P122
P131
P272
PRE AMP & Hi-Fi PCB
V1190A502A
PJ1
VIDEO/AUDIO (EXCEPT EA-D)
PJ2
DECODER (EXCEPT EA-D)
PJ3 PJ4 PJ5
PJ6 PJ7 PJ8
(EA-D)
IN/OUT (A) PCB
V1190A503A
WP34
BLANKING
RED
V.GND
GREEN
V.GND
BLUE
EOG-VD ONLY
WF35
WF36
WF37
WF38
WF39
EXCEPT EA-D
P3
P603
P102
WF402
P101
P401
P185
WF85
WF132
IN/OUT (B) PCB
V1190A503B
*WF39
EA-D:1P-12P
EXCEPT EA-D:1P-11P
P105
P605
P104
P604
WP140
WF141
P337
MAIN PCB
V1190A501A
IN/OUT (C) PCB
V1190A503C
*P306
EA-D:3P-5P
EOG-VD:2P-7P
EXCEPT ABOVE:1P-7P
*P606
EA-D:3P-5P
EOG-VD:2P-7P
EXCEPT ABOVE:1P-7P
P344
P307
P607
EOH-VD, EOG-VD
EK-VN ONLY
WP342
P134
P142
EOG-VD ONLY
VPST/PDCT PCB
V1184A5040
P104
WF604
P112
WF612
P113
WF613
P114
SECAM DET &
NTSC PCB
V1190A503D
P627
P328
EA-D, EK-VN, EOG-VD ONLY
P420
CAPSTAN MOTOR
(SCV-0602A)
P453
MODE SELECTOR SW
LM/MS PCB
LOADING MOTOR
WF219
P610
P609
EK-VN, EOH-ONLY
*P611
EK-VN, EOH-CN:1P-5P
EA-D, EO-D, EOG-VD, EOH-VD:1P-4P
WF254
WF615
P418
P624
P24
P1
A B C D E F
1 2 3 4 5 6 7 8

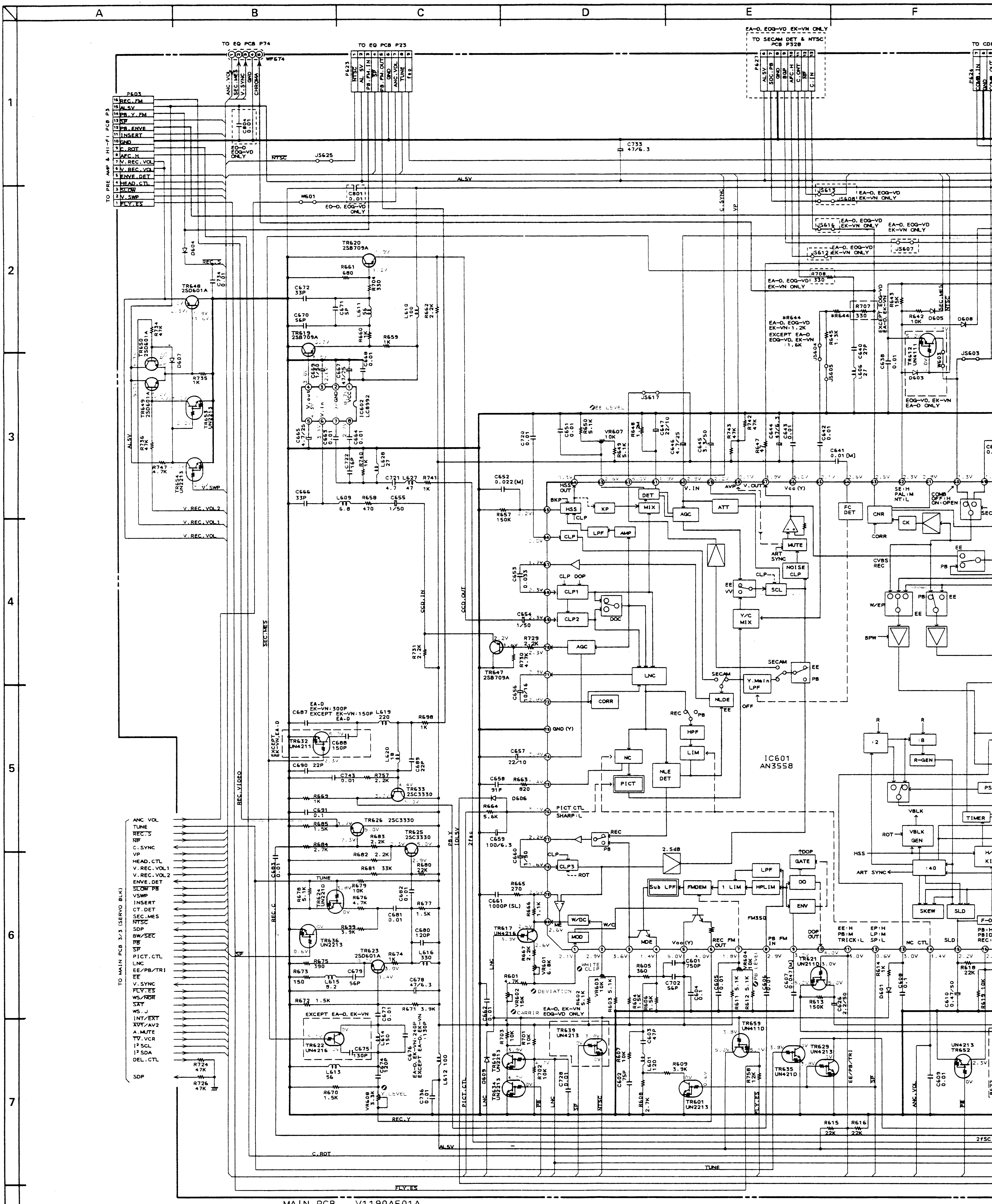
WARNING: ⚠ AND INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSMENT: ⚠ ET . ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

INDICATED VOLTAGES WERE MEASURED DURING PB MODE. (TAPE SPEED SP)


F
G
H
I
J
K
1
2
3
4
5
6
7
8
A/C HEAD PCB
V1102B5120
AUDIO REC/PB
SIDE ERASE
CONTROL
A/C REC
A/C PB
H.GND
SH E
CTL -
CTL +
TV TUNER
EA-O:TERS1-002C
EK-VN:TERB1-008B
EO-O:TERE1-007D
EOG-VD:TEKE4-034B
EOH-DN, EOH-VD
:ENV-57BC9F1
RF CONVERTER
EA-O:YAA21-0809G
EK-VN:MDLK6B733A
EOH-DN:YAA21-1003G
EO-D, EOG-VD, ECH-VD
EOH-DN (V1)
:MDLK6D755A
ANT IN
RF OUT
VIF UNIT
(6B01297A1)
*CN1
EA-O:1P~6P
EO-D, EOG-VD, EK-VN:1P~9P
EOH-DN/VD:1P~11P
EQ PCB
V1196A5040
POWER SUPPLY PCB
(EOG-VD ONLY)
V1182A5030
(EXCEPT EOG-VD)
V1182A5070
D-NICAM PCB
V1190A5080
(EK-VN, EOH-DN ONLY)
D-MUITI PCB
V1190A5070
(EA-O, EO-D, EOG-VD, EOH-VD ONLY)
EK-VN, EOH-DN:1P~5P
EXCEPT EK-VN, EOH-DN:1P~4P
TR (A) PCB
V1190A501B
TR202
2SD2396
JOG/SHUTTLE PCB
V1196A503A
PACK SW PCB
V1196A506B
DOOR MOTOR PCB
V1196A506C
CAM SW PCB
V1196A506A
TR (C) PCB
V1196A501B
TR14
2SD2396
OPERATION (B) PCB
V1196A502A
OPERATION (C) PCB
V1196A502C
OPERATION (A) PCB
V1196A501A
FULL TRACK ERASE HEAD
FRONT PCB
V1196A502B
CDR PCB
V1188A5010
FLD PCB
V1196A5050
LOADING MOTOR
M/MS PCB

VS-G2100EA-D/EO-D/EOH-DN
VS-G2160EOH-VD
VS-G2200EK-VN/EOG-VD
CONNECTION DIAGRAM
No.19-1 V119601M
A1


A
B
C
D
E
F
1
2
3
4
5
6
7
8
TO EQ PCB P74
WF674
ANC VOL
SEC.MES
V.SYNC
GND
CHROMA
TO EQ PCB P23
P623
NTSC
AL 5V
PB.FM.IN
SP
PB.FM.OUT
GND
ANC.VOL
TUNE
fsp
EA-0, EOG-VD EK-VN ONLY
TO SECAM DET & NTSC PCB P328
P627
AL5V
SDC.PB
GND
SQP
AFC.H
C.ONT
SP
C.IN
TO CD
P624
P603
REC.FM
AL5V
PB.Y.FM
SP
PB.ENVE
INSERT
GND
C.ROT
AFC.H
V.REC.VOL
V.REC.VOL
ENVE.DET
HEAD.CTL
SLOW
V.SWP
FLY.ES
TO PRE AMP & HI-FI PCB P3
C604
0.01
EO-O
EOG-VD
ONLY
NTSC
JS625
C733
47/6.3
AL5V
W601
C801
0.01
EO-O, EOG-VD ONLY
C.SYNC
VP
JS613
JS608
EA-O, EOG-VD EK-VN ONLY
JS616
JS607
JS612
R708
330
D604
REC.S
C734
0.01
TR648
2SD601A
TR620
2SB709A
R661
680
R704
330
C672
33P
C671
5P
C670
56P
L611
56
L610
100
R662
2.2K
TR619
2SB709A
R660
1K
R659
1K
C668
0.01
C667
47/25
C663
C669
IC602
LC8992
R734
47K
TR650
2SD601A
D607
R735
1K
TR649
2SD601A
TR653
UN2213
AL5V
R736
47K
R747
4.7K
TR654
UN2213
V.SWP
V.REC.VOL2
V.REC.VOL1
V.REC.VOL
C665
4.7/25
C664
0.01
C722
56P
R740
1K
L628
27
C721
4.7
L627
47
R741
1K
C666
33P
L609
6.8
R658
470
C655
1/50
CCD.IN
CCD.OUT
R731
2.2K
SEC.MES
REC.VIDEO
EA-D
EK-VN:300P
EXCEPT EK-VN:150P
C687
L619
220
R698
1K
TR632
UN4211
C688
150P
L620
18
C689
22P
C690
22P
C743
0.01
R757
2.2K
TR633
2SC3330
R669
1K
C691
0.1
R685
1.5K
TR626
2SC3330
R683
2.2K
TR625
2SC3330
R684
2.7K
R682
2.2K
R681
33K
R680
22K
C683
0.01
R678
15K
TR624
UN2210
R679
10K
R676
4.7K
C682
0.01
R677
1.5K
C681
0.01
R699
3.9K
TR636
UN2213
C680
120P
L616
330
R675
390
TR623
2SD601A
R674
1K
R673
150
L615
8.2
C679
56P
C678
47/6.3
R672
1.5K
EXCEPT EA-0, EK-VN
C677
0.01
R671
3.9K
TR622
UN4216
L614
150
C675
130P
C676
EA-O, EK-VN:240P
EXCEPT EA-O:130P
L612
100
L613
56
C674
120P
R670
1.5K
VR608
3.3K
Y LEVEL
C736
0.01
REC.Y
REC.C
PB.Y
IDL5V
2fsc
ANC VOL
TUNE
REC.S
NP
C.SYNC
VP
HEAD.CTL
V.REC.VOL1
V.REC.VOL2
ENVE.DET
SLOW PB
VSWP
INSERT
CT.DET
SEC.MES
NTSC
SDP
BW/SEC
PB
SP
PICT.CTL
LNC
EE/PB/TRI
EE
V.SYNC
FLY.ES
WS/NOR
SAT
WS.J
INT/EXT
AVT/AV2
A.MUTE
TV.VCR
I2 SCL
I2 SDA
DEL.CTL
SDP
R724
47K
R726
47K
TO MAIN PCB 3/3 (SERVO BLK)
AL5V
C.ROT
TUNE
FLY.ES
EE LEVEL
JS617
C720
0.01
C651
0.01
R650
5.1K
VR607
10K
R648
1.2M
C647
22/10
C646
4.7/25
R649
5.1K
C645
3.3/50
R743
47K
R742
47K
R647
47K
C644
47/6.3
C643
0.01
C642
0.01
C641
0.01 (M)
C652
0.022 (M)
R657
150K
HSS OUT
BKP
HSS
KP
DET
MIX
AGC
ATT
V.IN
AVP
V.OUT
Vcc (Y)
FC DET
CNR
CK
CORR
SE:H
PAL:M
NT:L
COMB
OFF:H
ON:OPEN
SEC
CLP
LPF
AMP
MUTE
ART SYNC
NOISE CLP
CVBS REC
EE
PB
C653
0.033
CLP DOP
CLP1
CLP2
DOC
SCL
Y/C MIX
W/EP
EE
PB
EE
BPW
C654
1/50
TR647
2SB709A
R729
2.2K
R730
4.7K
AGC
LNC
SECAM
Y.Main LPF
OFF
EE
PB
C656
10/16
CORR
NLDE
EE
REC
PB
HPF
LIM
GND (Y)
C657
22/10
NC
NLE DET
PICT
IC601
AN3558
C658
91P
R663
820
D606
R664
5.6K
PICT CTL
SHARP:L
C659
100/6.3
REC
PB
CLP
C660
1/50
CLP3
ROT
2.5dB
LPF
DOP
GATE
DO
Sub LPF
FMDEM
1 LIM
HPLIM
ENV
R665
270
C661
1000P (SL)
R666
1K
MB
W/DC
W/C
FM350
MOD
MDE
Vcc (Y)
REC FM OUT
PB FM IN
DOP OUT
EE:H
PB:M
TRICK:L
EP:H
LP:M
SP:L
NC CTL
SLD
TR617
UN4216
R667
2.2K
VR601
6.8K
WHITE CLIP
R605
360
C601
750P
C702
56P
R604
10K
PB LEVEL
R611
5.1K
R612
5.1K
C605
0.01
C607
0.047 (M)
TR621
UN2110
R613
150K
C626
2.2/50
R614
1K
D601
C608
0.1
R601
4.7K
VR602
10K
DEVIATION
CARRIR
VR603
10K
R602
5.1K
R603
5.1K
R606
15K
C604
0.01
EA-O, EK-VN
EOG-VD ONLY
C662
0.01
R703
10K
R701
10K
TR639
UN4213
TR618
UN2213
R607
10K
C603
47P
TR659
UN4110
D609
TR634
UN2213
R702
10K
C728
0.01
C602
75P
L601
120
R609
3.9K
TR601
UN2213
R608
2.7K
R758
12K
TR635
UN4210
TR629
UN4213
EE/PB/TRI
SP
PICT CTL
LNC
PB
LNC
SP
NTSC
FLY.ES
R615
22K
R616
22K
2fSC
R644
EA-O, EOG-VD EK-VN:1.2K
EXCEPT EA-O EOG-VD, EK-VN :1.6K
R707
330
R645
1.3K
L606
27
C640
27P
C638
0.01
R643
15K
R642
10K
D605
D608
TR612
UN4111
W603
D603
EOG-VD, EK-VN EA-D ONLY
JS603
JS604
JS605
SEC.MES
NTSC
R
÷2
÷8
R-GEN
PS
VBLK
ROT
VBLK GEN
TIMER
HSS
ART SYNC
÷40
SKEW
SLD
F-O
PB:H
PB:D
REC
R618
22K
C610
0.47/50
TR652
UN4213
C609
0.01
ANC.VOL
PB

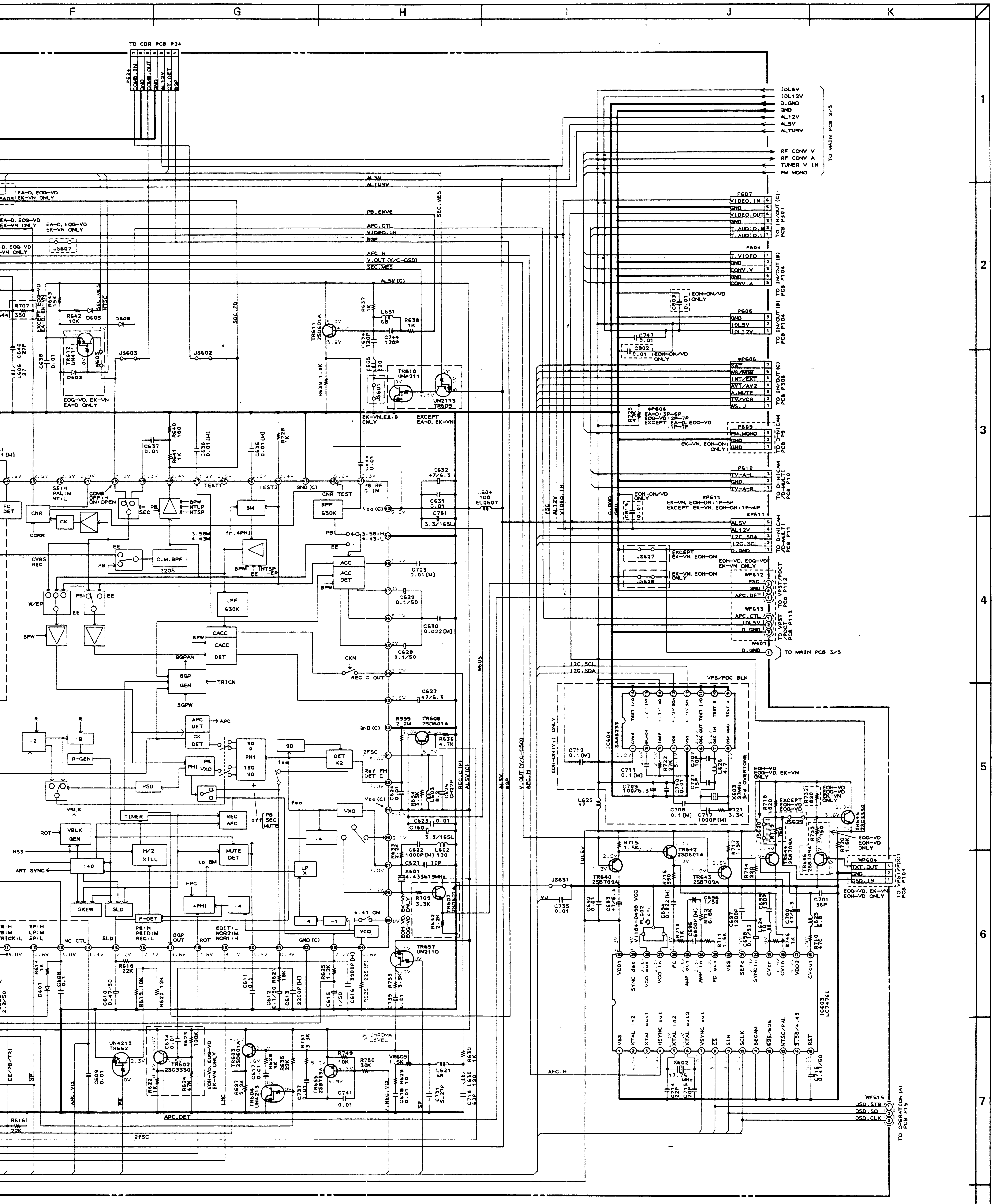
MAIN PCB V1190A501A

B (POWER SUPPLY) LINE
PB Y SIGNAL LINE
REC Y SIGNAL LINE
PB CHROMA SIGNAL LINE
REC CHROMA SIGNAL LINE
PB AUDIO SIGNAL LINE
REC AUDIO SIGNAL LINE

NOTE;
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN µF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN µF/WV
ALL INDUCTORS IN µH
ALL DIODES ARE 1SS131T

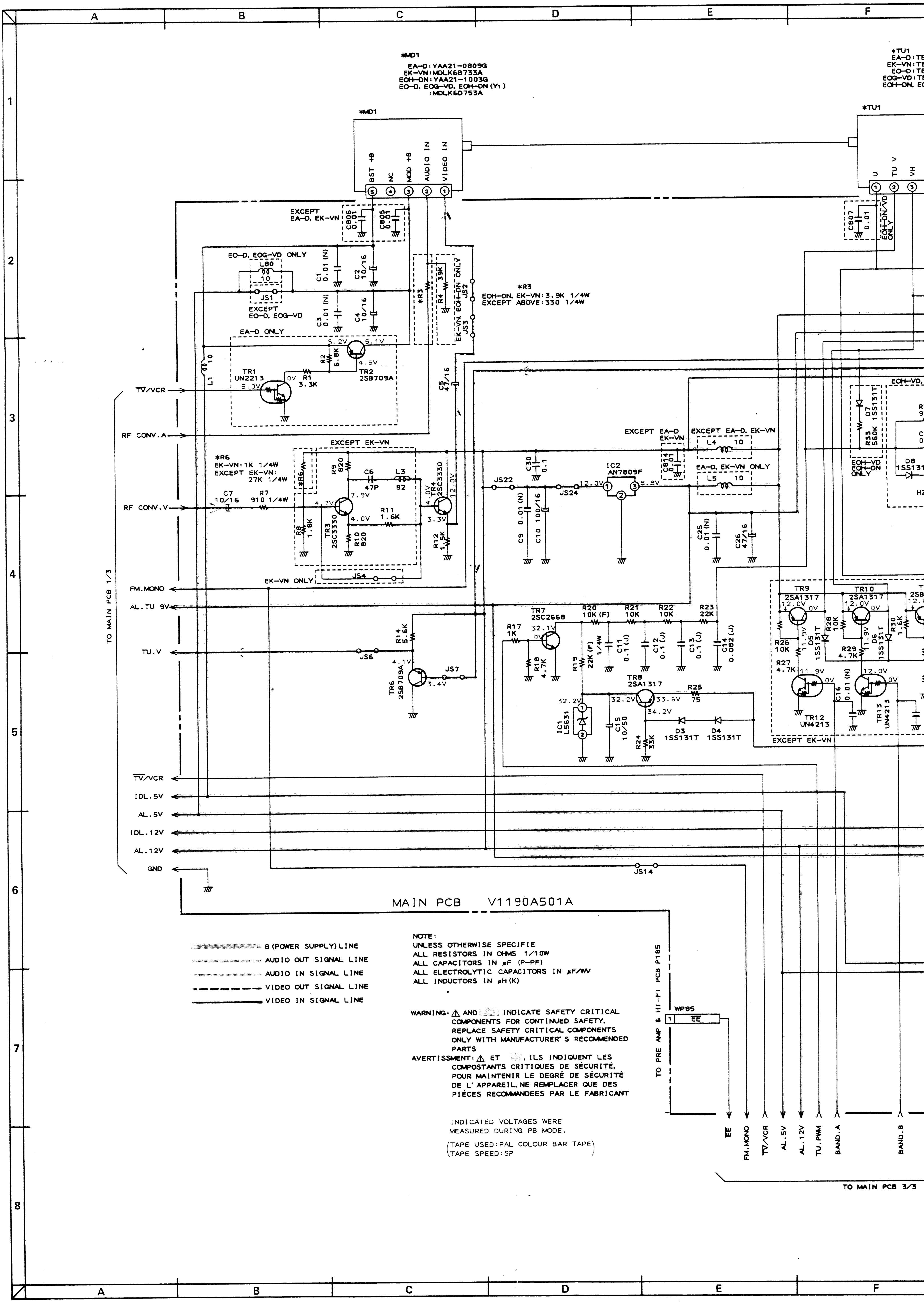
INDICATED VOLTAGES WERE
MEASURED DURING PB MODE.
( ) : REC MODE
(TAPE USED: PAL COLOUR BAR TAPE)
(TAPE SPEED: SP

A B C D E F


F
G
H
I
J
K
1
2
3
4
5
6
7
8
TO CDR PCB P24
IDL5V
IDL12V
D.GND
GND
AL12V
AL5V
ALTU9V
RF CONV V
RF CONV A
TUNER V IN
FM MONO
TO MAIN PCB 2/3
P607
VIDEO.IN
GND
VIDEO.OUT
T.AUDIO.R
T.AUDIO.L
TO IN/OUT (C) PCB P507
P604
T.VIDEO
CONV.V
CONV.A
TO IN/OUT (B) PCB P104
P605
#P606
SAT
INT/EXT
AV1/AV2
A.MUTE
TV/VCR
WS.J
TO IN/OUT (C) PCB P506
P609
FM.MONO
P610
TV-A-L
TV-A-R
#P611
I2C.SDA
I2C.SCL
WF612
FSC
APC.DET
WF613
APC.CTL
TO VPST /PDCT PCB P112
TO VPST /PDCT PCB P113
W401
TO MAIN PCB 3/3
VPS/PDC BLK
IC604 SAA5233
IC603 LC74760
WF604
TXT.OUT
OSD.IN
TO VPST/PDCT PCB P104
WF615
OSD.STB
OSD.SO
OSD.CLK
TO OPERATION (A) PCB P15
FC DET
CNR
CK
CORR
BPF 630K
BM
LPF 630K
CACC
CACC DET
BGP GEN
ACC
ACC DET
C.M.BPF
APC DET
CK DET
PH1
PB VXO
PSD
R-GEN
TIMER
REC AFC
VBLK GEN
H/2 KILL
MUTE DET
F-DET
SKEW
SLD
4PHI
VXO
VCO
LP X
DET X2
CHROMA LEVEL
X601 4.433619MHz
X602 17.734MHz
X603 27MHz 3rd OVERTONE
TRICK
ART SYNC
HSS
ROT
2fSC
AFC.H
APC.DET

INDICATED VOLTAGES WERE
MEASURED DURING PB MODE.
( ) :REC MODE
(TAPE USED:PAL COLOUR BAR TAPE)
(TAPE SPEED:SP

VS-G2100EA-D/EO-D/EOH-DN
VS-G2160EOH-VD
VS-G2200EK-VN/EOG-VD
MAIN 1/3
(VIDEO BLK)
SCHEMATIC DIAGRAM
No.19-2 V119602M
A0


A
B
C
D
E
F
1
2
3
4
5
6
7
8
*MD1
EA-D:YAA21-0809G
EK-VN:MDLK6B733A
EOH-DN:YAA21-1003G
EO-D, EOG-VD, EOH-DN (Y1)
:MDLK6D753A
*MD1
BST +B
NC
MOD +B
AUDIO IN
VIDEO IN
⑤ ④ ③ ② ①
*TU1
EA-D:TE
EK-VN:TE
EO-D:TE
EOG-VD:TE
EOH-DN, EC
*TU1
U
TU V
VH
① ② ③
C807 0.01
EOH-DN/VD ONLY
EXCEPT EA-D, EK-VN
C806 0.01
C805 0.01
EO-D, EOG-VD ONLY
L80 10
JS1
EXCEPT EO-D, EOG-VD
C1 0.01 (N)
C2 10/16
C3 0.01 (N)
C4 10/16
*R3
R4 39K
EK-VN, EOH-DN ONLY
JS2
JS3
*R3
EOH-DN, EK-VN:3.9K 1/4W
EXCEPT ABOVE:330 1/4W
EA-D ONLY
L1 10
5.2V
5.1V
R2 6.8K
4.5V
TR1 UN2213
0V
R1 3.3K
TR2 2SB709A
5.0V
C5 47/16
TV/VCR
RF CONV.A
EXCEPT EK-VN
*R6
EK-VN:1K 1/4W
EXCEPT EK-VN: 27K 1/4W
*R6
R9 820
C6 47P
L3 82
TR4 2SC3330
4.0V
12.0V
7.9V
C7 10/16
R7 910 1/4W
RF CONV.V
4.7V
R11 1.6K
4.0V
3.3V
R8 1.8K
TR3 2SC3330
R10 820
R12 1.5K
EK-VN ONLY
JS4
TO MAIN PCB 1/3
FM.MONO
AL.TU 9V
TU.V
C30 0.1
JS22
JS24
IC2 AN7809F
12.0V
8.8V
① ② ③
C9 0.01 (N)
C10 100/16
EXCEPT EA-D EK-VN
C814 0.01
EXCEPT EA-D, EK-VN
L4 10
EA-D, EK-VN ONLY
L5 10
C25 0.01 (N)
C26 47/16
EOH-VD
D7 1SS131T
R33 560K
EOH-VD EOH-DN ONLY
D8 1SS131
HZ
R14 5.6K
JS6
4.1V
TR6 2SB709A
3.4V
JS7
TR7 2SC2668
R17 1K
32.1V
0V
R18 4.7K
R19 22K (F) 1/4W
R20 10K (F)
R21 10K
R22 10K
R23 22K
C11 0.1 (J)
C12 0.1 (J)
C13 0.1 (J)
C14 0.082 (J)
TR8 2SA1317
32.2V
32.2V
33.6V
34.2V
R25 75
IC1 LS631
C15 10/50
R24 33K
D3 1SS131T
D4 1SS131T
TR9 2SA1317
TR10 2SA1317
12.0V
0V
12.0V
0V
R26 10K
11.9V
D5 1SS131T
R28 10K
11.9V
D6 1SS131T
R30 1.5K
R27 4.7K
R29 4.7K
11.9V
0V
12.0V
0V
TR12 UN4213
C16 0.01 (N)
TR13 UN4213
EXCEPT EK-VN
TV/VCR
IDL.5V
AL.5V
IDL.12V
AL.12V
GND
JS14
MAIN PCB V1190A501A
TO PRE AMP & HI-FI PCB P185
WP85
1
EE
EE
FM.MONO
TV/VCR
AL.5V
AL.12V
TU.PWM
BAND.A
BAND.B
TO MAIN PCB 3/3

▨ B (POWER SUPPLY) LINE
AUDIO OUT SIGNAL LINE
AUDIO IN SIGNAL LINE
VIDEO OUT SIGNAL LINE
VIDEO IN SIGNAL LINE

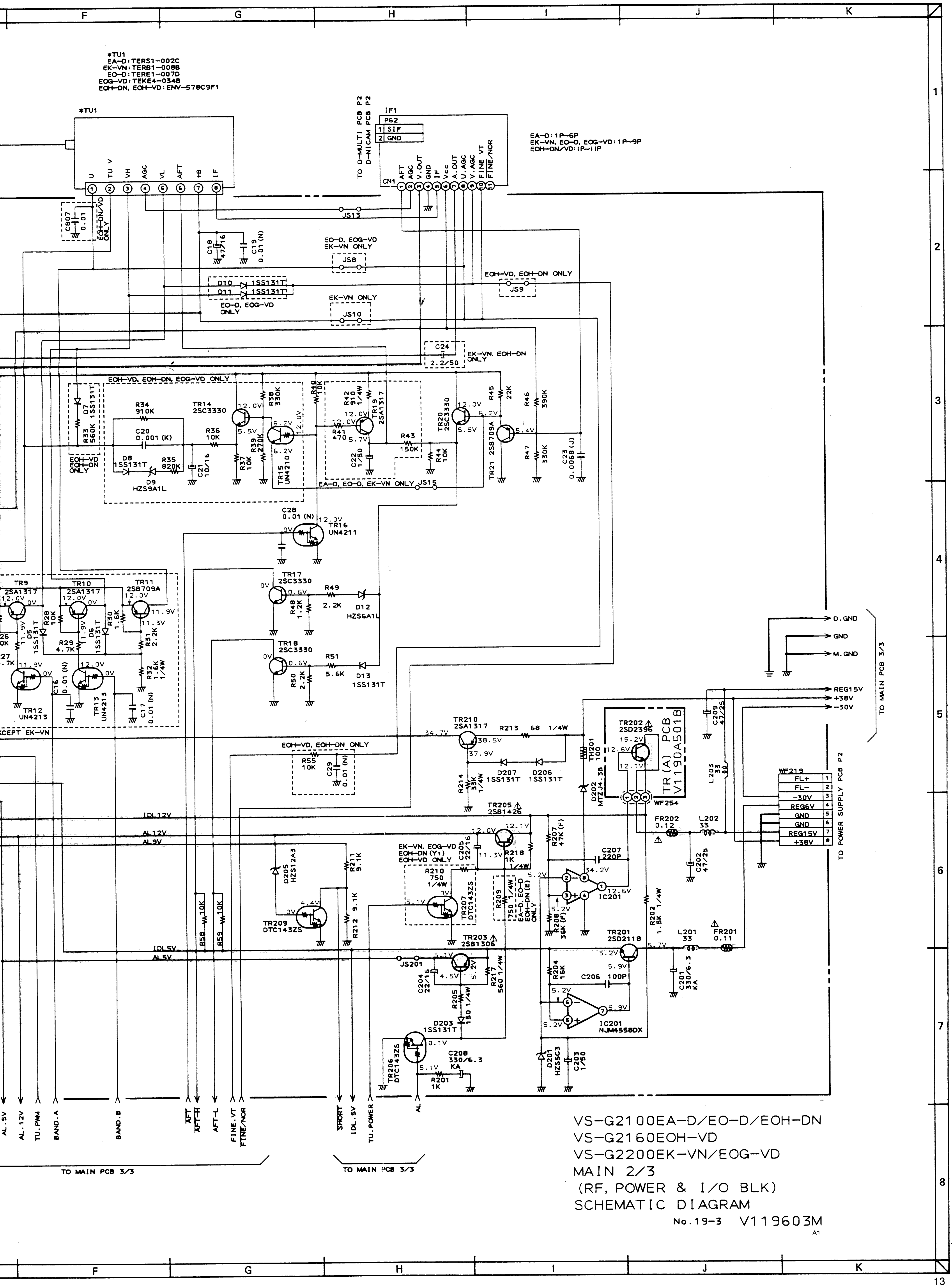
NOTE:
UNLESS OTHERWISE SPECIFIE
ALL RESISTORS IN OHMS 1/10W
ALL CAPACITORS IN µF (P-PF)
ALL ELECTROLYTIC CAPACITORS IN µF/WV
ALL INDUCTORS IN µH (K)

WARNING: ⚠ AND ▨ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

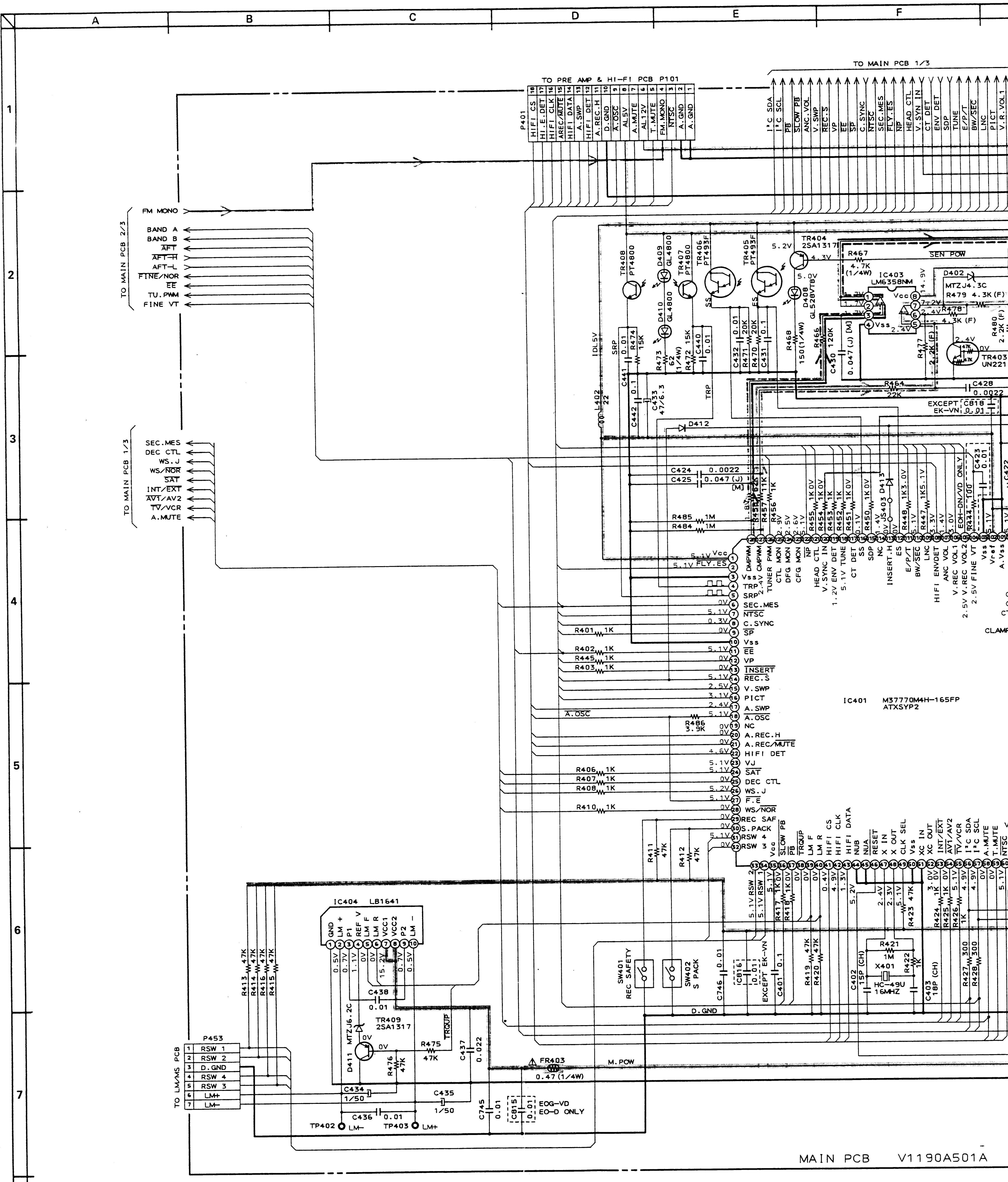
AVERTISSMENT: ⚠ ET ▨, ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

INDICATED VOLTAGES WERE MEASURED DURING PB MODE.

(TAPE USED: PAL COLOUR BAR TAPE
TAPE SPEED: SP)


F
G
H
I
J
K
1
2
3
4
5
6
7
8
*TU1
EA-D:TERS1-002C
EK-VN:TERB1-008B
EO-D:TERE1-007D
EOG-VD:TEKE4-034B
EOH-DN, EOH-VD:ENV-578C9F1
*TU1
U
TU V
VH
AGC
VL
AFT
+B
IF
TO D-MULTI PCB P2
TO D-NICAM PCB P2
IF1
P62
1 SIF
2 GND
CN1
AFT
AGC
V.OUT
GND
IF
Vcc
A.OUT
U.AGC
V.AGC
FINE VT
FINE/NOR
EA-D:1P-6P
EK-VN, EO-D, EOG-VD:1P-9P
EOH-DN/VD:1P-11P
C807 0.01
EOH-DN/VD ONLY
JS13
C18 47/16
C19 0.01 (N)
EO-D, EOG-VD
EK-VN ONLY
JS8
D10 1SS131T
D11 1SS131T
EO-D, EOG-VD ONLY
EK-VN ONLY
JS10
EOH-VD, EOH-DN ONLY
JS9
C24 2.2/50
EK-VN, EOH-DN ONLY
EOH-VD, EOH-DN, EOG-VD ONLY
D7 1SS131T
R33 560K
EOH-VD EOH-DN ONLY
R34 910K
C20 0.001 (K)
D8 1SS131T
R35 820K
D9 HZS9A1L
TR14 2SC3330
R36 10K
C21 10/16
R37 10K
R38 330K
R39 270K
TR15 UN4210
R40 10K
R42 910 1/4W
TR19 2SA1317
R41 470
C22 1/50
R43 150K
R44 10K
EA-D, EO-D, EK-VN ONLY
JS15
TR20 2SC3330
R45 22K
TR21 2SB709A
R46 390K
R47 330K
C23 0.0068 (J)
C28 0.01 (N)
TR16 UN4211
TR17 2SC3330
R49 2.2K
D12 HZS6A1L
R48 1.2K
TR18 2SC3330
R51 5.6K
D13 1SS131T
R50 2.2K
TR9 2SA1317
TR10 2SA1317
TR11 2SB709A
R28 10K
D5 1SS131T
R29 4.7K
D6 1SS131T
R30 1.6K
R31 2.2K
TR12 UN4213
TR13 UN4213
C16 0.01 (N)
R32 1.6K 1/4W
C17 0.01 (N)
EXCEPT EK-VN
EOH-VD, EOH-DN ONLY
R55 10K
C29 0.01 (N)
TR210 2SA1317
R213 68 1/4W
R214 33K 1/4W
D207 1SS131T
D206 1SS131T
TH201 100
D202 MTZJ4.3B
TR202 2SD2396
TR(A) PCB V1190A501B
WF254
TR205 2SB1426
R207 47K (F)
C207 220P
IC201
D205 HZS12A3
R211 9.1K
TR209 DTC143ZS
R212 9.1K
EK-VN, EOG-VD
EOH-DN (Y1)
EOH-VD ONLY
C205 22/16
R218 1K 1/4W
R210 750 1/4W
TR207 DTC143ZS
R209 750 1/4W
EA-D, EO-D
EOH-DN (E)
ONLY
R208 36K (F)
R202 1.5K 1/4W
TR201 2SD2118
L201 33
FR201 0.11
C201 330/6.3 KA
R58 10K
R59 10K
TR203 2SB1306
JS201
C204 22/16
R217 560 1/4W
R205 150 1/4W
D203 1SS131T
R204 16K
C206 100P
IC201 NJM4558DX
TR206 DTC143ZS
C208 330/6.3 KA
R201 1K
D201 HZS5C3
C203 1/50
IDL12V
AL12V
AL9V
IDL5V
AL5V
D.GND
GND
M.GND
REG15V
+38V
-30V
TO MAIN PCB 3/3
C209 47/25
L203 33
WF219
FL+
FL-
-30V
REG6V
GND
GND
REG15V
+38V
TO POWER SUPPLY PCB P2
FR202 0.12
L202 33
C202 47/25
AL.5V
AL.12V
TU.PWM
BAND.A
BAND.B
AFT
AFT-H
AFT-L
FINE.VT
FINE/NOR
SHORT
IDL.5V
TU.POWER
AL
TO MAIN PCB 3/3
TO MAIN PCB 3/3

VS-G2100EA-D/EO-D/EOH-DN
VS-G2160EOH-VD
VS-G2200EK-VN/EOG-VD
MAIN 2/3
(RF, POWER & I/O BLK)
SCHEMATIC DIAGRAM
No.19-3 V119603M
A1


A
B
C
D
E
F
1
2
3
4
5
6
7
8
TO MAIN PCB 1/3
TO PRE AMP & HI-FI PCB P101
P401
HIFI CS
HI.E.DET
HIFI CLK
AREC/MUTE
HIFI DATA
A.SWP
HIFI DET
A.REC.H
D.GND
A.OSC
AL5V
A.MUTE
AL12V
T.MUTE
FM.MONO
NTSC
A.GND
A.GND
I²C SDA
I²C SCL
PB
SLOW PB
ANC.VOL
V.SWP
REC.S
VP
EE
SP
C.SYNC
NTSC
SEC.MES
FLY.ES
NP
HEAD CTL
V.SYN IN
CT DET
ENV DET
SDP
TUNE
E/P/T
BW/SEC
LNC
PICT
V.R.VOL1
TO MAIN PCB 2/3
FM MONO
BAND A
BAND B
AFT
AFT-H
AFT-L
FINE/NOR
EE
TU.PWM
FINE VT
TO MAIN PCB 1/3
SEC.MES
DEC CTL
WS.J
WS/NOR
SAT
INT/EXT
AVT/AV2
TV/VCR
A.MUTE
TR408 PT4800
D409 GL4800
TR407 PT4800
TR406 PT495F
TR405 PT495F
TR404 2SA1317
D410 GL4800
D408 GL528VT8
IC403 LM6358NM
R467 4.7K (1/4W)
SEN POW
D402
MTZJ4.3C
R479 4.3K (F)
R478 4.3K (F)
R480 2.2K (F)
TR403 UN221
R477 2.2K (F)
R464 22K
C428 0.0022
EXCEPT EK-VN
C818 0.01
C423 0.01
EOH-DN/VD ONLY
IDL5V
SRP
TRP
L402 22
D412
C424 0.0022
C425 0.047 (J) [M]
R485 1M
R484 1M
D413
IC401 M37770M4H-165FP ATXSYP2
R401 1K
R402 1K
R445 1K
R403 1K
R486 3.9K
R406 1K
R407 1K
R408 1K
R410 1K
R411 47K
R412 47K
A.OSC
Vcc
FLY.ES
Vss
TRP
SRP
SEC.MES
NTSC
C.SYNC
SP
Vss
EE
VP
INSERT
REC.S
V.SWP
PICT
A.SWP
A.OSC
NC
A.REC.H
A.REC/MUTE
HIFI DET
VJ
SAT
DEC CTL
WS.J
F.E
WS/NOR
REC SAF
S.PACK
RSW 4
RSW 3
DMPWM
CMPWM
TUNER PWM
CTL MON
DFG MON
CFG MON
NP
HEAD CTL
V.SYNC IN
ENV DET
TUNE
CT DET
SS
SDP
NC
INSERT.H
ES
E/P/T
BW/SEC
LNC
HIFI ENVDET
ANC VOL
V.REC VOL1
V.REC VOL2
FINE VT
Vss
Vref
A.Vss
CLAMP
Vcc
SLOW PB
PB
TRQUP
LM F
LM R
HIFI CS
HIFI CLK
HIFI DATA
NUB
NUA
RESET
X IN
X OUT
CLK SEL
Vss
XC IN
XC OUT
INT/EXT
AVT/AV2
TV/VCR
I²C SDA
I²C SCL
A.MUTE
T.MUTE
NTSC
IC404 LB1641
GND
LM +
P1
REF V
LM F
LM R
VCC1
VCC2
P2
LM -
R413 47K
R414 47K
R416 47K
R415 47K
C438 0.01
MTZJ6.2C
TR409 2SA1317
D411
R475 47K
R476 47K
TRQUP
C437 0.022
FR403 0.47 (1/4W)
M.POW
C434 1/50
C435 1/50
C436 0.01
C745 0.01
C815 0.01
EOG-VD EO-D ONLY
TP402 LM-
TP403 LM+
P453
RSW 1
RSW 2
D.GND
RSW 4
RSW 3
LM+
LM-
TO LM/MS PCB
SW401 REC SAFETY
SW402 S PACK
C746 0.01
C816 0.01
EXCEPT EK-VN
C401 0.1
R419 47K
R420 47K
C402 15P (CH)
R421 1M
X401 HC-49U 16MHZ
R422 1K
C403 18P (CH)
R427 300
R428 300
D.GND
MAIN PCB V1190A501A

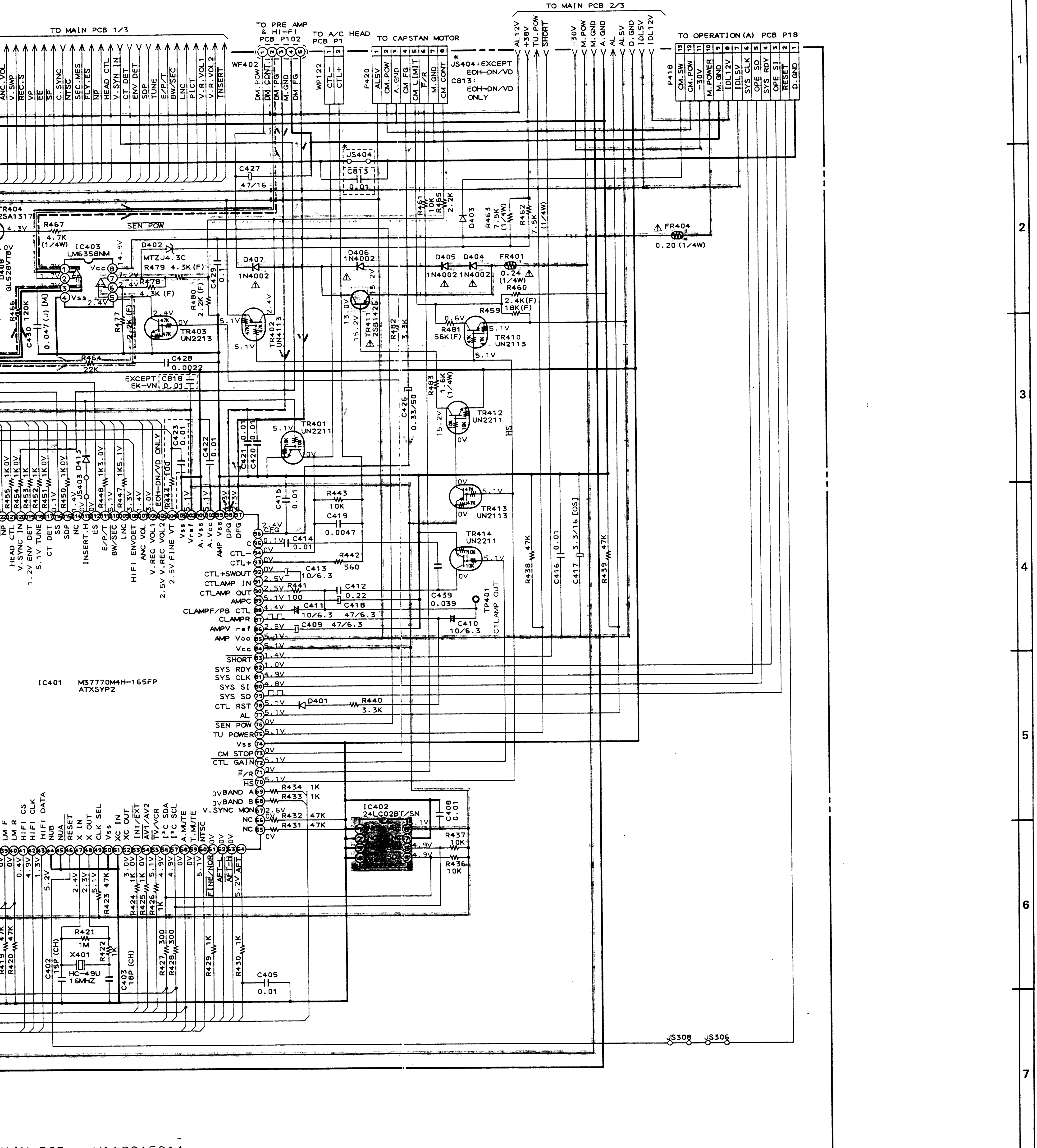
▬▬▬ B (POWER SUPPLY) LINE
— — — CAPSTAN MOTOR PHASE CONTROL LINE
—— —— CAPSTAN MOTOR SPEED CONTROL LINE
– – – DRUM MOTOR PHASE CONTROL LINE
——— DRUM MOTOR SPEED CONTROL LINE
— · — AUDIO IN SIGNAL LINE

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/10W OR 1/4W (J)
ALL CAPACITORS IN μF (P=PF) (J)
ALL ELECTROLYTIC CAPACITORS IN μF/WV (M)
[D] IS ELECTRIC DOUBLE LAYER CAPACITOR
ALL DIODES ARE 1SS131
ALL INDUCTORS IN μH (K)

INDICATED VOLTAGES WERE
MEASURED DURING PB MODE.
(TAPE SPEED: SP)

WARNING: ⚠ AND ▨ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSMENT: ⚠ ET ▨, ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÉCES RECOMMANDEES PAR LE FABRICANT


TO MAIN PCB 1/3
TO PRE AMP & HI-FI PCB P102
TO A/C HEAD PCB P1
TO CAPSTAN MOTOR
TO MAIN PCB 2/3
TO OPERATION (A) PCB P18
WF402
WP122
P420
P418
JS404: EXCEPT EOH-DN/VD
C813: EOH-DN/VD ONLY
IC403 LM6358NM
IC401 M37770M4H-165FP ATXSYP2
IC402 24LC02BT/SN
TR401 UN2211
TR402 UN4113
TR403 UN2213
TR404 2SA1317
TR410 UN2113
TR411 2SB1426
TR412 UN2211
TR413 UN2113
TR414 UN2211
D401
D402 MTZJ4.3C
D404 1N4002
D405 1N4002
D406 1N4002
D407 1N4002
D408 GL528VT8
FR401 0.24 (1/4W)
FR404 0.20 (1/4W)
X401 HC-49U 16MHZ
TP401 CTLAMP OUT
JS308
JS306

MAIN PCB V1190A501A

AND INDICATE SAFETY CRITICAL
OMPONENTS FOR CONTINUED SAFETY.
EPLACE SAFETY CRITICAL COMPONENTS
NLY WITH MANUFACTURER'S RECOMMENDED
ARTS
ENT: ⚠ ET , ILS INDIQUENT LES
OMPOSTANTS CRITIQUES DE SÉCURITÉ.
OUR MAINTENIR LE DEGRÉ DE SÉCURITÉ
E L'APPAREIL, NE REMPLACER QUE DES
IÈCES RECOMMANDEES PAR LE FABRICANT

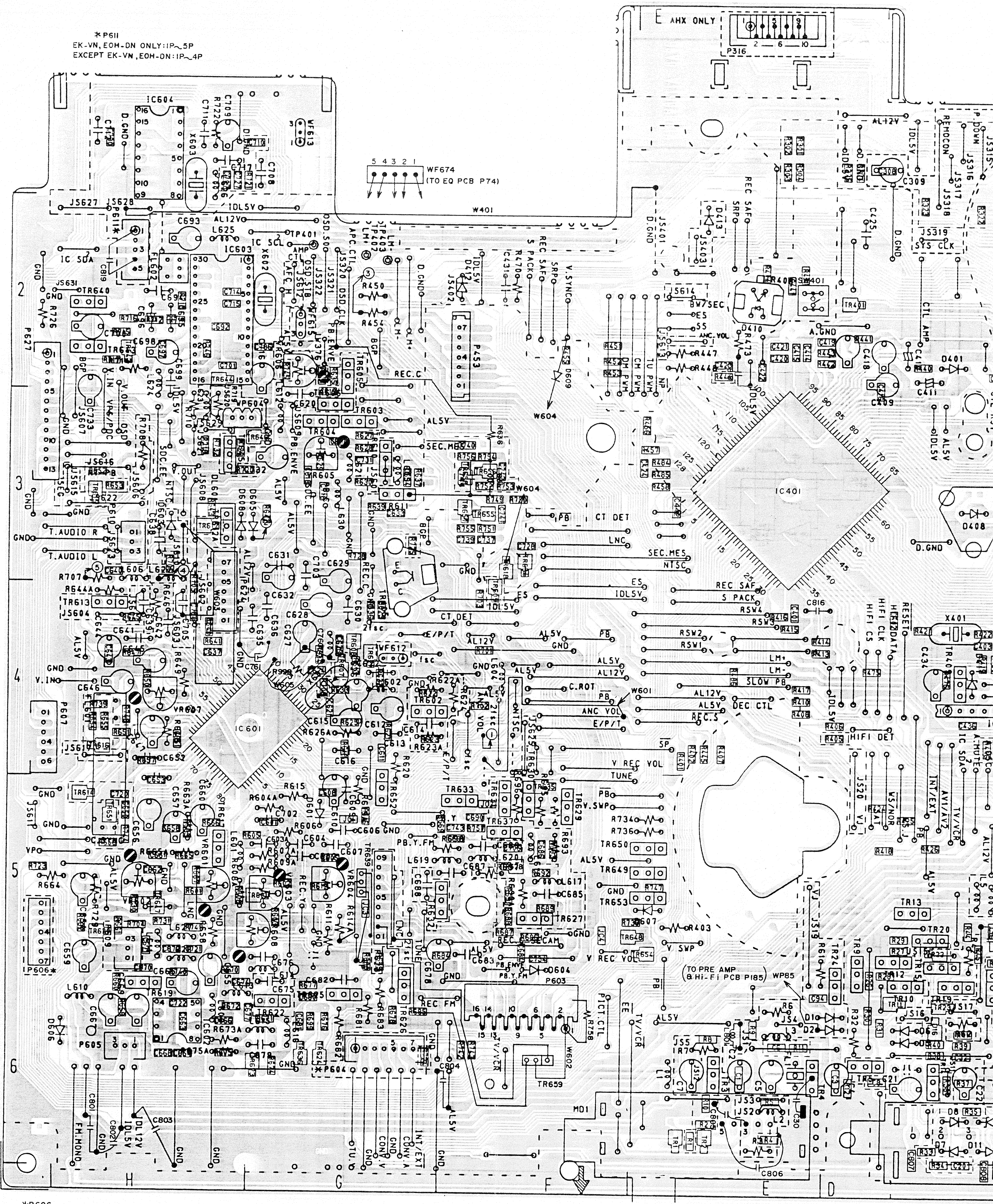
CAUTION: IF THE IC402 (EEP-ROM) IS REPLACED, THE FOLLOWING SHOULD BE PERFORMED TO MAINTAIN PROPER PERFORMANCE. REFER TO THE "INFORMATION" SECTION IN THE PROVIDED SERVICE MANUAL OR OPERATOR'S MANUAL FOR 7.

1. VERSION (MODEL) CODE PRESET
2. SWITCHING POINT PRESET
3. Y REC CURRENT PRESET
4. I-HQ PRESET
5. AUDIO LEVEL METER SENSITIVITY PRESET
6. TRACKING CENTRE POSITION (1F) CHECK
7. TUNER PRESET

VS-G2100EA-D/EO-D/EOH-DN
VS-G2160EOH-VD
VS-G2200EK-VN/EOG-VD
MAIN 3/3
(SERVO/SYSCON BLK)
SCHEMATIC DIAGRAM

No.19-4 V119604M
A1

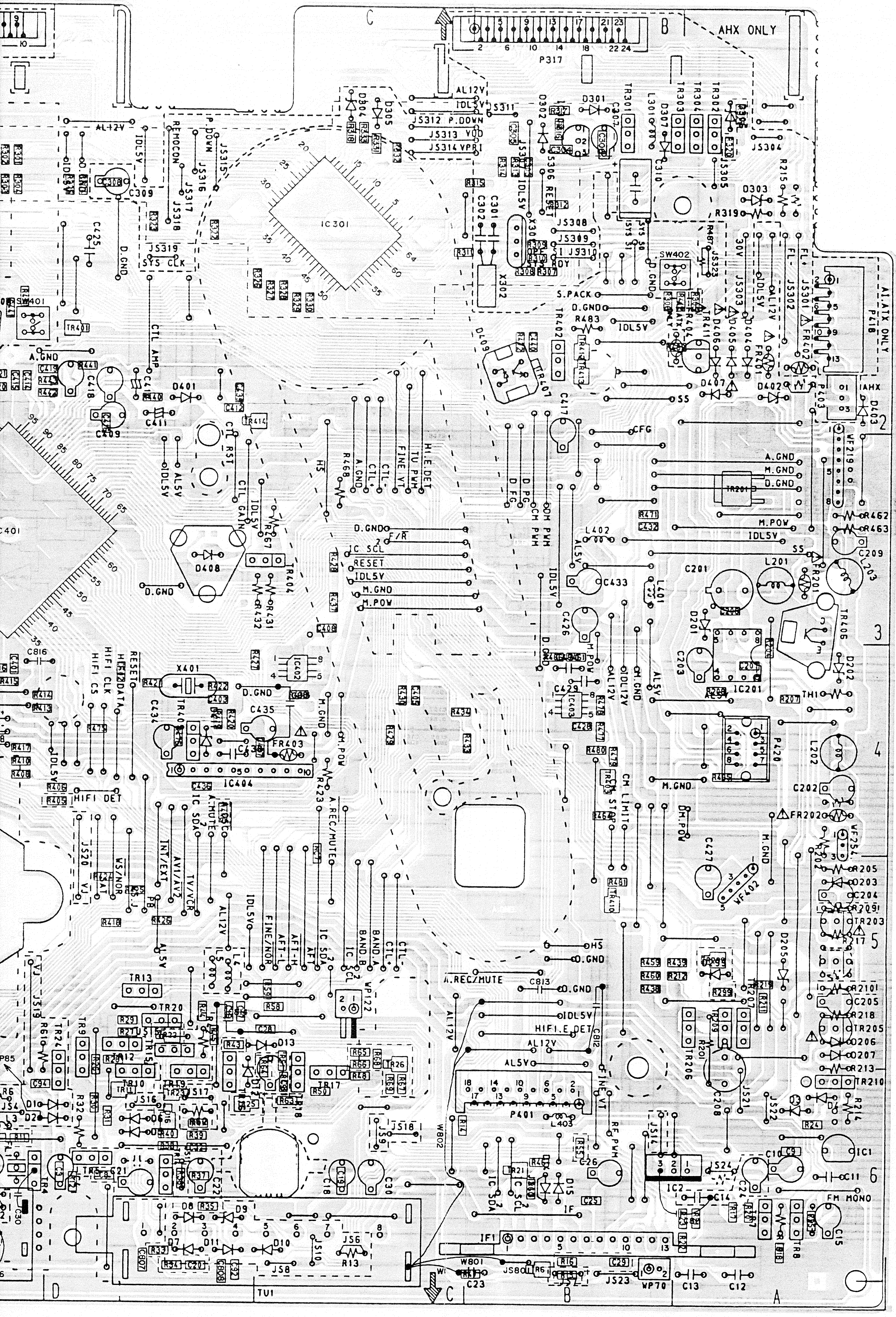
*P611
EK-VN, EOH-DN ONLY:1P~5P
EXCEPT EK-VN, EOH-DN:1P~4P


AHX ONLY
P316
WF674
(TO EQ PCB P74)
IC604
IC603
IC601
IC401
W401
W604
W601
W602
WF613
WF612
P627
P607
P606*
P605
*P604
P603
P453
X401
X602
X603
D.GND
GND
AL12V
AL5V
IDL5V
IC SDA
IC SCL
T.AUDIO R
T.AUDIO L
V.IN
VP
FM.MONO
REC SAF
SRP
REC.C
PB.ENVE
SEC.MES
NTSC
CT DET
LNC
ES
S PACK
RSW1
RSW2
RSW3
RSW4
LM+
LM-
SLOW PB
DEC CTL
HIFI DET
HIFI CS
HIFI CLK
RESET
E/P/T
C.ROT
ANC VOL
REC.S
V REC VOL
TUNE
PB.Y.FM
REC FM
V SWP
PICT.CTL
TV/VCR
(TO PRE AMP & Hi-Fi PCB P185)
WP85
MD1
C806
REMOCON
P.DOWN
SYS CLK
D.GND
INT/EXT
TV/VCR
AV1/AV2
C.ROT
E
F
G
H
I
D
2
3
4
5
6

*P606
EA-D:3P~5P
EOG-VD ONLY:2P~7P
EXCEPT EA-D,EOG-VD:1P~7P

*P604 1P~5P

MAIN PCB V1190A501A



A501A

PRINCIPAL PARTS LOCATION

ICs

IC2	A,B6
IC201	A4
IC401	E3
IC402	C4
IC403	B4
IC404	C,D4
IC601	G,H4
IC602	H6
IC603	H2
IC604	H2

WF & WPs

WF219	A3
WF254	A4
WF402	A5
WF612	G4
WF613	G2
WF615	G2
WP85	E6
WP122	C5
WP604	H3

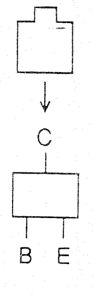
CONNECTORs

P401	B6
P418	A2
P420	A4
P453	F2
P603	F6
P604	G6
P605	H6
P606	H5
P607	H4
P609	H5
P610	H3
P611	H2
P623	G5
P624	H4
P627	H2,3

TRANSISTORs

TR1	E6
TR2	E6
TR3	E6
TR4	E6
TR5	D6
TR6	B6
TR7	A6
TR8	A6
TR9	D5,6
TR10	D6
TR11	D6
TR12	D5
TR13	D5
TR14	D6
TR15	D5
TR16	D6
TR17	C6
TR18	C6
TR19	D6
TR20	D5
TR21	B6
TR201	A3
TR203	A5
TR205	A5
TR206	A5
TR207	A5
TR209	A5
TR210	A6
TR401	D2
TR402	B2
TR403	B4
TR404	C,D4
TR405	G3,4
TR406	A3
TR407	B2
TR408	E2
TR409	D4
TR410	B5
TR411	A2
TR412	B2
TR413	B2
TR414	D2
TR601	G5
TR602	G4
TR603	G3
TR604	G3
TR605	G2
TR606	G3
TR607	G4
TR608	G4
TR609	F3,4
TR610	G3
TR611	G3
TR612	H3
TR614	H5
TR615	H3
TR616	H4
TR617	H5
TR618	F3
TR619	H6
TR620	H5
TR621	G4
TR622	G6
TR623	G6
TR624	G6
TR625	G6
TR626	G6
TR629	F5
TR633	F5
TR634	F3
TR635	F5
TR636	G6
TR637	F5
TR639	G5
TR640	H2
TR642	H2
TR643	H2
TR644	H2
TR645	H3
TR646	G3
TR647	H5
TR648	F5
TR649	E5
TR650	E5
TR651	H5
TR652	G5
TR653	E5
TR654	E5
TR655	F3
TR656	F3
TR657	F3
TR658	F3
TR659	F6

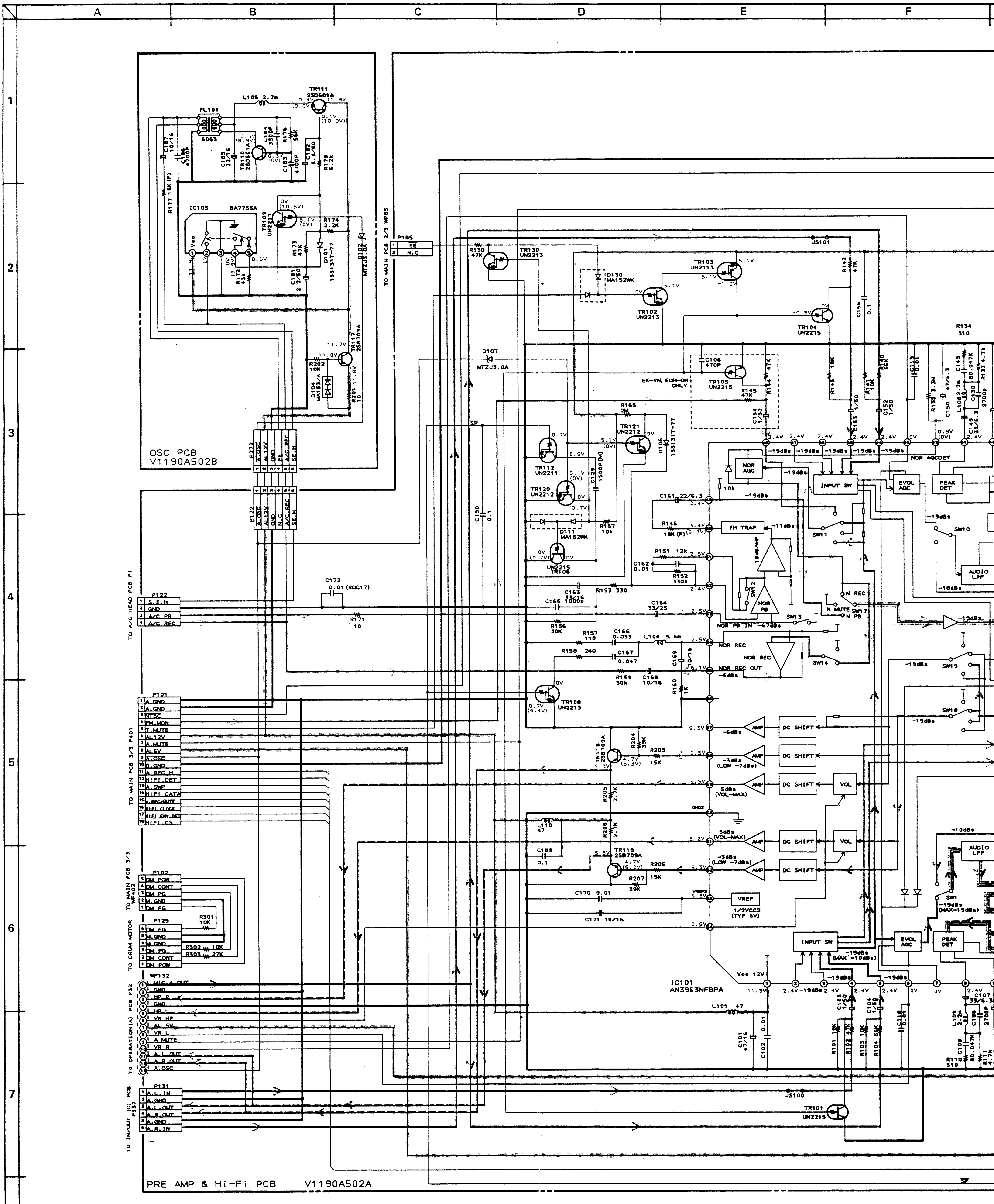
SINGLE CHIP TRANSISTOR



NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SECURITE. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL. NE REMPLACER QUE DES PIECES RECOMMANDEES PAR LE FABRICANT


A
B
C
D
E
F
1
2
3
4
5
6
7
8
L106 2.7m
TR111 2SD601A
FL101
6063
C187 10/16
C186 4700P
C185 22/16
TR110 2SD601A
C184 3300P
C183 4700P
R176 56K
C182 3.3/50
R175 6.2k
R177 15K (F)
IC103 BA7755A
TR109 UN2211
R174 2.2K
R173 47K
D101 1SS131T-77
D102 MTZJ3.0A
R172 43k
C181 2.2/50
TR117 2SB709A
R202 10K
D104 MA153/A
R201 10
OSC PCB
V1190A502B
P272
A.OSC
AL12V
GND
EE
A/C REC
SE.H
P172
A.OSC
AL12V
GND
N.C
A/C REC
SE.H
TO MAIN PCB 2/3 WP85
P185
EE
N.C
R130 47K
TR130 UN2213
D130 MA152WK
TR103 UN2113
TR102 UN2213
JS101
R142 47K
TR104 UN2215
C156 0.1
R134 510
D107 MTZJ3.0A
C106 470P
TR105 UN2215
R145 47K
R144 47K
EK-VN, EOH-ON ONLY
R165 2M
TR121 UN2212
D106 1SS131T-77
TR112 UN2211
TR120 UN2212
C129 1500P(MJ)
D111 MA152WK
UN2215 TR106
R157 10k
C190 0.1
C161 22/6.3
R146 18K (F)
R151 12k
C162 0.01
R152 330k
R153 330
C163 33/16
C165 1000p
C164 33/25
NOR AGC
INPUT SW
EVOL AGC
PEAK DET
fH TRAP
SW10
SW11
SW12
SW13
SW14
SW15
SW16
SW17
NOR PB
NOR REC
N MUTE
NOR PB IN -47dBs
NOR REC OUT -5dBs
AUDIO LPF
NOR AGCDET
TO A/C HEAD PCB P1
P122
S.E.H
GND
A/C PB
A/C REC
C172 0.01 (RQC17)
R171 10
R156 30K
R157 110
C166 0.033
L104 5.6m
R158 240
C167 0.047
R159 30k
C168 10/16
C169 10/16
R160 1K
TR108 UN2213
P101
A.GND
A.GND
NTSC
FM.MON
T.MUTE
AL12V
A.MUTE
AL5V
A.OSC
D.GND
A.REC H
HIFI.DET
A.SWP
HIFI DATA
A.REC-MUTE
HIFI CLOCK
HIFI ENV.DET
HIFI.CS
TO MAIN PCB 3/3 P401
TR118 2SB709A
R204 39K
R203 15K
R205 2.7K
R208 2.7K
AMP
DC SHIFT
VOL
L110 47
C189 0.1
TR119 2SB709A
R206 15K
R207 39K
C170 0.01
C171 10/16
VREF
1/2VCC2 (TYP 6V)
TO MAIN PCB 3/3 WF402
P102
DM POW
DM CONT
DM PG
M.GND
DM FG
P129
DM FG
M.GND
M.GND
DM PG
DM CONT
DM POW
R301 10K
R302 10K
R303 27K
TO DRUM MOTOR
WF132
MIC A.OUT
GND
HP R
GND
HP L
VR HP
AL 5V
VR L
A.MUTE
VR R
A.L.OUT
A.R.OUT
A.OSC
TO OPERATION (A) PCB P32
P131
A.L.IN
A.GND
A.L.OUT
A.R.OUT
A.GND
A.R.IN
TO IN/OUT (C) PCB P337
IC101 AN3963NFBPA
Vcc 12V
L101 47
C101 47/16
C102 0.01
C103 1/50
R101 18K
R102 47K
R103 10K
R104 56K
C104 1/50
C118 0.01
JS100
TR101 UN2215
R110 510
R111 4.7k
C107 33/6.3
SW1
PRE AMP & Hi-Fi PCB V1190A502A

B (POWER SUPPLY) LINE

NORMAL AUDIO PB SIGNAL LINE

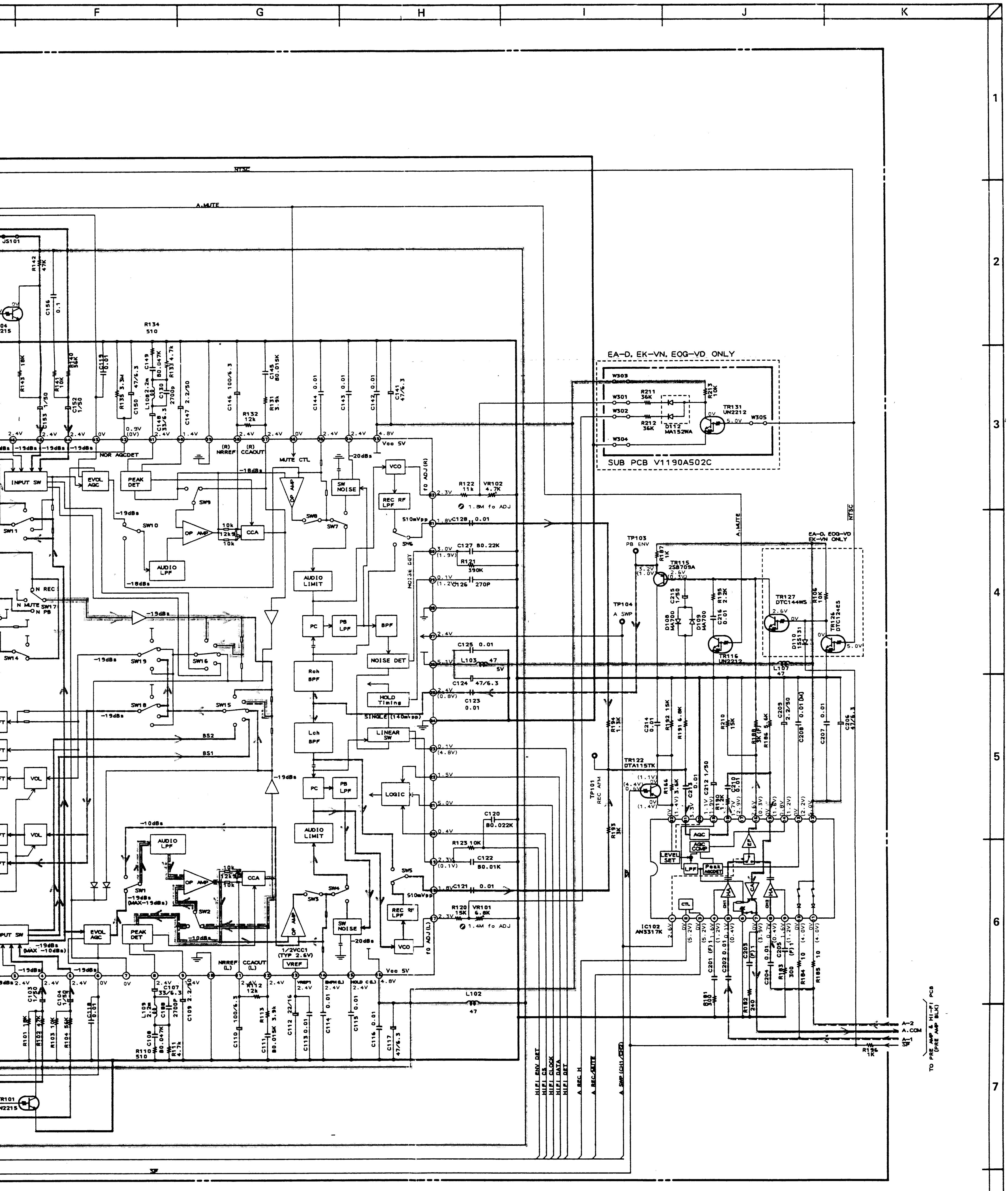
NORMAL AUDIO REC SIGNAL LINE

AUDIO PB SIGNAL LINE LINE

AUDIO REC & EE SIGNAL LINE

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF
ALL CAPACITORS IN μF/WV ()
ALL INDUCTORS IN μH (K)

A B C D E F


F
G
H
I
J
K
1
2
3
4
5
6
7
8
NTSC
A.MUTE
JS101
R142 47K
C156 0.1
R134 510
EA-D, EK-VN, EOG-VD ONLY
W303
W301
W302
W304
W305
R211 36K
R212 36K
R213 10K
D112 MA152WA
TR131 UN2212
SUB PCB V1190A502C
INPUT SW
EVOL AGC
PEAK DET
OP AMP
CCA
AUDIO LPF
SW NOISE
VCO
REC RF LPF
AUDIO LIMIT
PC
PB LPF
BPF
NOISE DET
Rch BPF
Lch BPF
HOLD Timing
LINEAR SW
LOGIC
VOL
VREF
1/2VCC1 (TYP 2.6V)
NOR AGCDET
MUTE CTL
NRREF
CCAOUT
Vcc 5V
R122 11k
VR102 4.7K
1.8M fo ADJ
R120 15K
VR101 6.8K
1.4M fo ADJ
510mVpp
SINGLE (140mVpp)
TP103 PB ENV
TP104 A SWP
TP101 REC AFM
TR115 2SB709A
TR116 UN2212
TR122 DTA115TK
TR127 DTC144WS
TR126 DTC124ES
D108 MA700
D109 MA700
D110 1SS131
EA-D, EOG-VD EK-VN ONLY
L107 47
L102 47
L103 47
IC102 AN3317K
AGC
AGC COMP
LEVEL SET
LPF
Peak AGCDET
CTL
TR101 UN2215
A-2
A.COM
A-1
TO PRE AMP & Hi-Fi PCB (PRE AMP BLK)
R196 1K
Hi-Fi ENV DET
Hi-Fi CS
Hi-Fi CLOCK
Hi-Fi DATA
Hi-Fi DET
A REC H
A REC/MUTE
A SWP (CH1/CH2)
SP

SPECIFIED
OHMS
μF
μF/WV ()
H (K)

INDICATED VOLTAGES WERE
MEASURED DURING PB MODE.
( ) : REC MODE
(TAPE SPEED : SP)

VS-G2100EA-D/EO-D/EOH-DN
VS-G2160EOH-VD
VS-G2200EK-VN/EOG-VD
PRE AMP & Hi-Fi (1/2)
(AUDIO BLK)
SCHEMATIC DIAGRAM

No.19-5 V119605M

A0

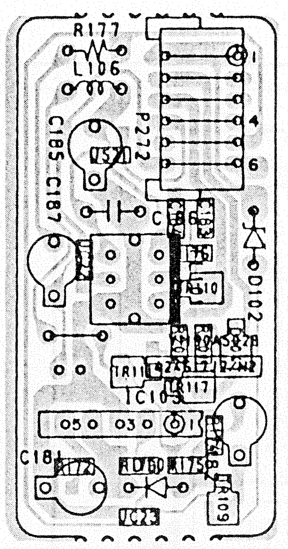
PRINCIPAL PARTS LOCATION

ICs	
IC1	E1,2
IC101	B,C1,2
IC102	D1

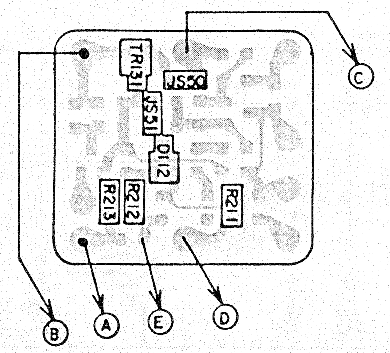
CONNECTORs	
P3	F1
P101	B1
P102	C1
P122	A,B2
P129	D2
P130	D,E2
P131	A1,2
P172	A1
P185	A1

WF&WPs	
WF132	A2
WP128	E1

TRANSISTORs	
TR4	F1,2
TR5	E2
TR6	F2
TR7	E2
TR8	F1
TR9	F2
TR10	F2
TR11	E2
TR12	E2
TR13	F2
TR14	E2
TR15	F2
TR16	F2
TR101	B2
TR102	A1
TR103	A1
TR104	A1
TR105	A1
TR106	A2
TR108	B2
TR112	B2
TR113	C2
TR114	A1
TR115	D1
TR116	D2
TR118	A2
TR119	A2
TR120	A2
TR121	A2
TR122	D1
TR126	C,D2
TR127	D2
TR130	A1

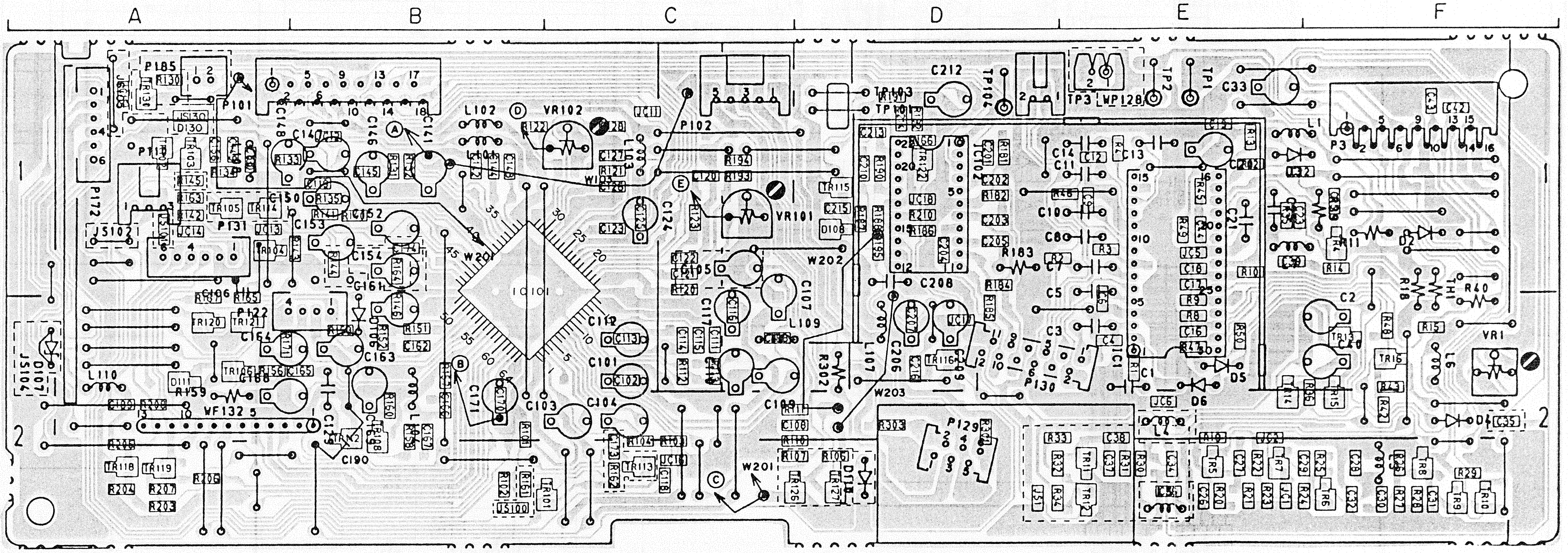

R177
L106
P272
C185
C187
D102
TR110
IC103
C181
VC23

OSC PCB VI190A502BJ2


TR131
JS50
JS51
D112
R213
R212
R211
Ⓐ
Ⓑ
Ⓒ
Ⓓ
Ⓔ

Ⓐ = W303
Ⓑ = W304
Ⓒ = W305
Ⓓ = W301
Ⓔ = W302

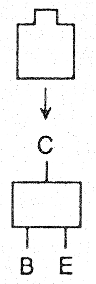
SUB PCB VI190A502CJ2
(EA-D, EK-VN, EOG-VD ONLY)

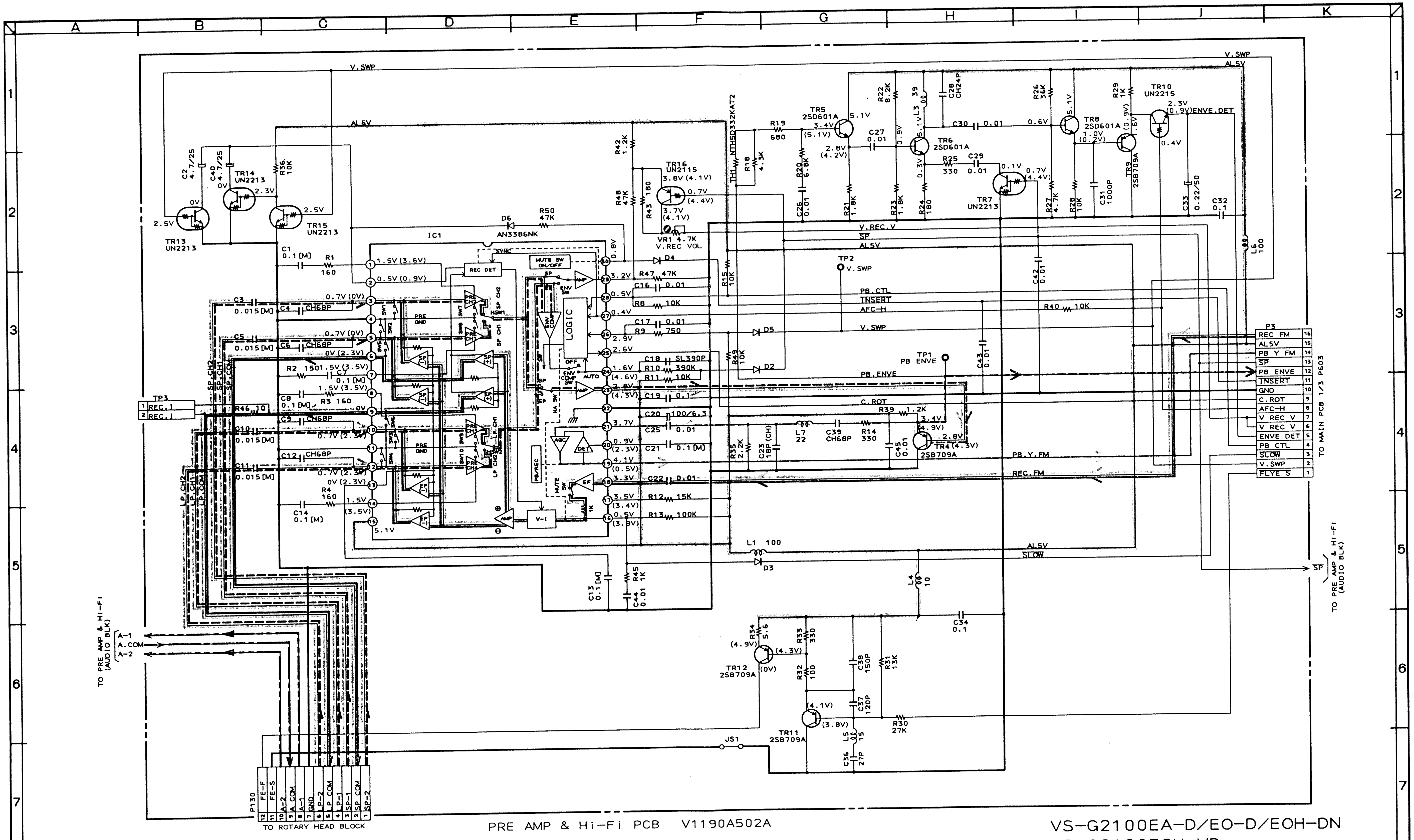

A
B
C
D
E
F
1
2
P185
P101
P172
P131
P122
P102
IC101
IC102
IC1
VR101
VR102
VR1
P129
P130
P3
WF132
WP128
TP1
TP2
TP3
TP101
TP103
TP106
W201
W202
W203

PRE AMP & Hi-Fi PCB VI190A502AJ2

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.

SINGLE CHIP TRANSISTOR




A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
8
V.SWP
AL5V
TR13
UN2213
TR14
UN2213
TR15
UN2213
C2 4.7/25
C40 4.7/25
R36 10K
C1 0.1 [M]
R1 160
IC1
AN3386NK
D6
R50 47K
REC DET
MUTE SW ON/OFF
LOGIC
ENV SW
PRE GND
AUTO
OFF
ENV COMP SW
HA SW
AGC
DET
PB/REC
V-1
EF
AMP
R2 150
C7 0.1 [M]
R3 160
C8 0.1 [M]
R4 160
C14 0.1 [M]
C3 0.015 [M]
C4 CH68P
C5 0.015 [M]
C6 CH68P
C9 CH68P
C10 0.015 [M]
C12 CH68P
C11 0.015 [M]
R46 10
TP3
REC.1
SP CH2
SP CH1
SP COM
LP CH2
LP CH1
LP COM
TR16
UN2115
VR1 4.7K
V.REC VOL
R42 1.2K
R48 47K
R43 180
TH1 NTH5D332KAT2
R19 680
R18 4.3K
R20 6.8K
C26 0.01
R21 1.8K
TR5
2SD601A
R22 8.2K
C27 0.01
R23 1.8K
R24 180
L3 39
C28 CH24P
TR6
2SD601A
R25 330
C29 0.01
TR7
UN2213
C30 0.01
R26 36K
R27 4.7K
R28 10K
C31 1000P
TR8
2SD601A
R29 1K
TR9
2SB709A
TR10
UN2215
ENVE.DET
C33 0.22/50
C32 0.1
L6 100
V.REC.V
SP
AL5V
D4
R47 47K
C16 0.01
R8 10K
C17 0.01
R9 750
D5
C18 SL390P
R10 390K
R11 10K
D2
C19 0.1
C20 100/6.3
C25 0.01
C21 0.1 [M]
C22 0.01
R12 15K
R13 100K
R15 10K
R49 10K
TP2
V.SWP
PB.CTL
INSERT
AFC-H
V.SWP
C42 0.01
R40 10K
TP1
PB ENVE
C43 0.01
PB.ENVE
C.ROT
R39 1.2K
R35 2.2K
C23 18P (CH)
L7 22
C39 CH68P
R14 330
C45 0.01
TR4
2SB709A
PB.Y.FM
REC.FM
P3
REC FM 16
AL5V 15
PB Y FM 14
SP 13
PB ENVE 12
INSERT 11
GND 10
C.ROT 9
AFC-H 8
V REC V 7
V REC V 6
ENVE DET 5
PB CTL 4
SLOW 3
V.SWP 2
FLYE S 1
TO MAIN PCB 1/3 P603
L1 100
D3
AL5V
SLOW
SP
TO PRE AMP & HI-FI (AUDIO BLK)
C13 0.1 [M]
R45 1K
C44 0.01
L4 10
C34 0.1
R34 5.6
R33 330
C38 150P
R31 13K
TR12
2SB709A
R32 100
C37 120P
R30 27K
TR11
2SB709A
L5 15
C36 27P
JS1
A-1
A.COM
A-2
TO PRE AMP & HI-FI (AUDIO BLK)
P130
12 FE-F
11 FE-S
10 A-2
9 A COM
8 A-1
7 GND
6 P-2
5 P COM
4 P-1
3 SP-1
2 SP COM
1 SP-2
TO ROTARY HEAD BLOCK
A2

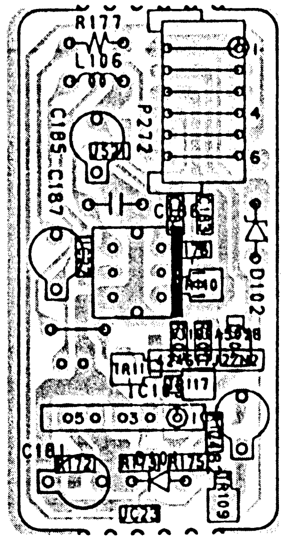
PRE AMP & Hi-Fi PCB V1190A502A

B (POWER SUPPLY) LINE
PB Y SIGNAL LINE
REC Y SIGNAL LINE
PB CHROMA SIGNAL LINE
REC CHROMA SIGNAL LINE
PB AUDIO SIGNAL LINE
REC AUDIO SIGNAL LINE

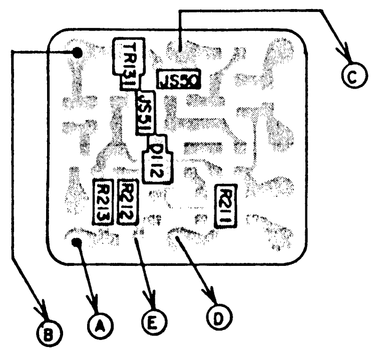
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF
ALL INDUCTORS IN μH (K)
ALL DIODES ARE 1SS131T-77

INDICATED VOLTAGES WERE MEASURED DURING PB MODE.
(TAPE SPEED: SP)
( ) : REC MODE
THE VOLTAGES AT THE TR11 AND TR12 WERE MEASURED WITHIN 30 SECONDS RIGHT AFTER THE "REC" MODE HAS BEEN ENGAGED.

VS-G2100EA-D/EO-D/EOH-DN
VS-G2160EOH-VD
VS-G2200EK-VN/EOG-VD
PRE AMP & Hi-Fi (2/2)
(PRE AMP BLK)
SCHEMATIC DIAGRAM
No.19-6 V119606M


R177
L106
C185
C187
P272
JS52
D102
TR111
IC103
C181
R172
R109
JC23

OSC PCB VI190A502BJ2


TR131
JS50
JS51
P112
R213
R212
R211
Ⓑ
Ⓐ
Ⓔ
Ⓓ
Ⓒ

SUB PCB VI190A502CJ2
(EA-D,EK-VN,EOG-VD ONLY)

Ⓐ = W303
Ⓑ = W304
Ⓒ = W305
Ⓓ = W301
Ⓔ = W302

PRINCIPAL PARTS LOCATION

ICs

IC1	E1,2
IC101	B,C1,2
IC102	D1

CONNECTORs

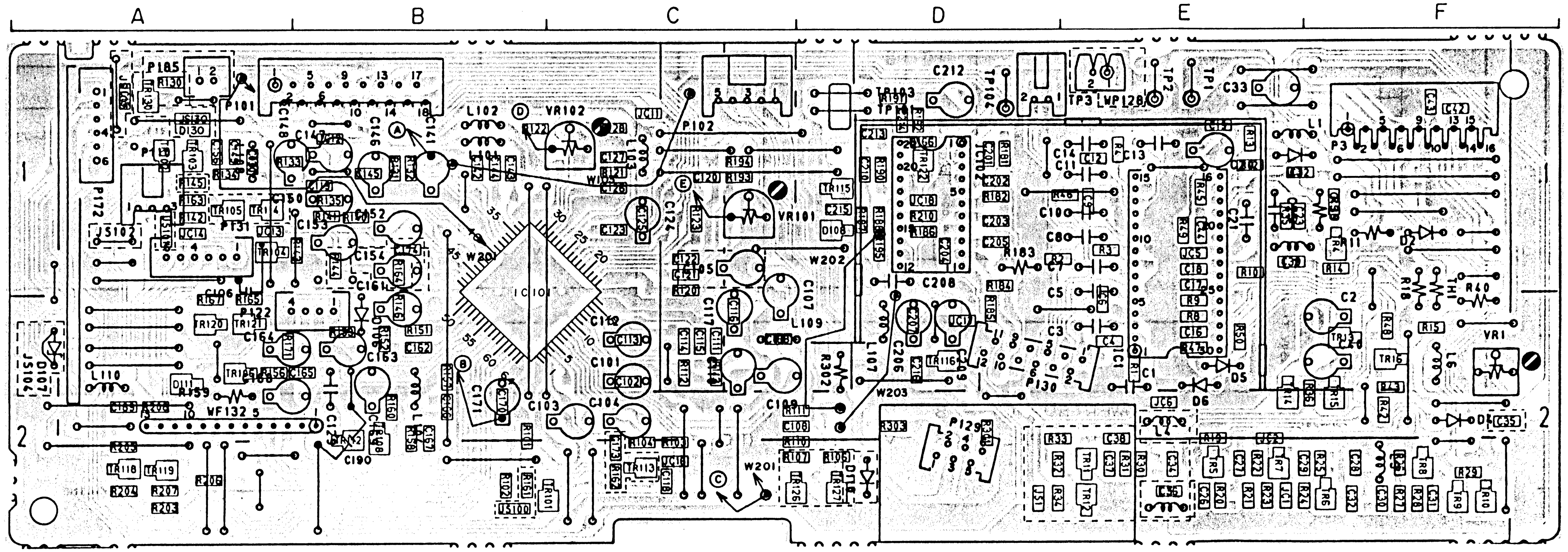
P3	F1
P101	B1
P102	C1
P122	A,B2
P129	D2
P130	D,E2
P131	A1,2
P172	A1
P185	A1

WF&WPs

WF132	A2
WP128	E1

TRANSISTORs

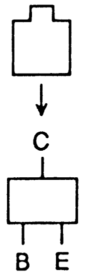
TR4	F1,2
TR5	E2
TR6	F2
TR7	E2
TR8	F1
TR9	F2
TR10	F2
TR11	E2
TR12	E2
TR13	F2
TR14	E2
TR15	F2
TR16	F2
TR101	B2
TR102	A1
TR103	A1
TR104	A1
TR105	A1
TR106	A2
TR108	B2
TR112	B2
TR113	C2
TR114	A1
TR115	D1
TR116	D2
TR118	A2
TR119	A2
TR120	A2
TR121	A2
TR122	D1
TR126	C,D2
TR127	D2
TR130	A1

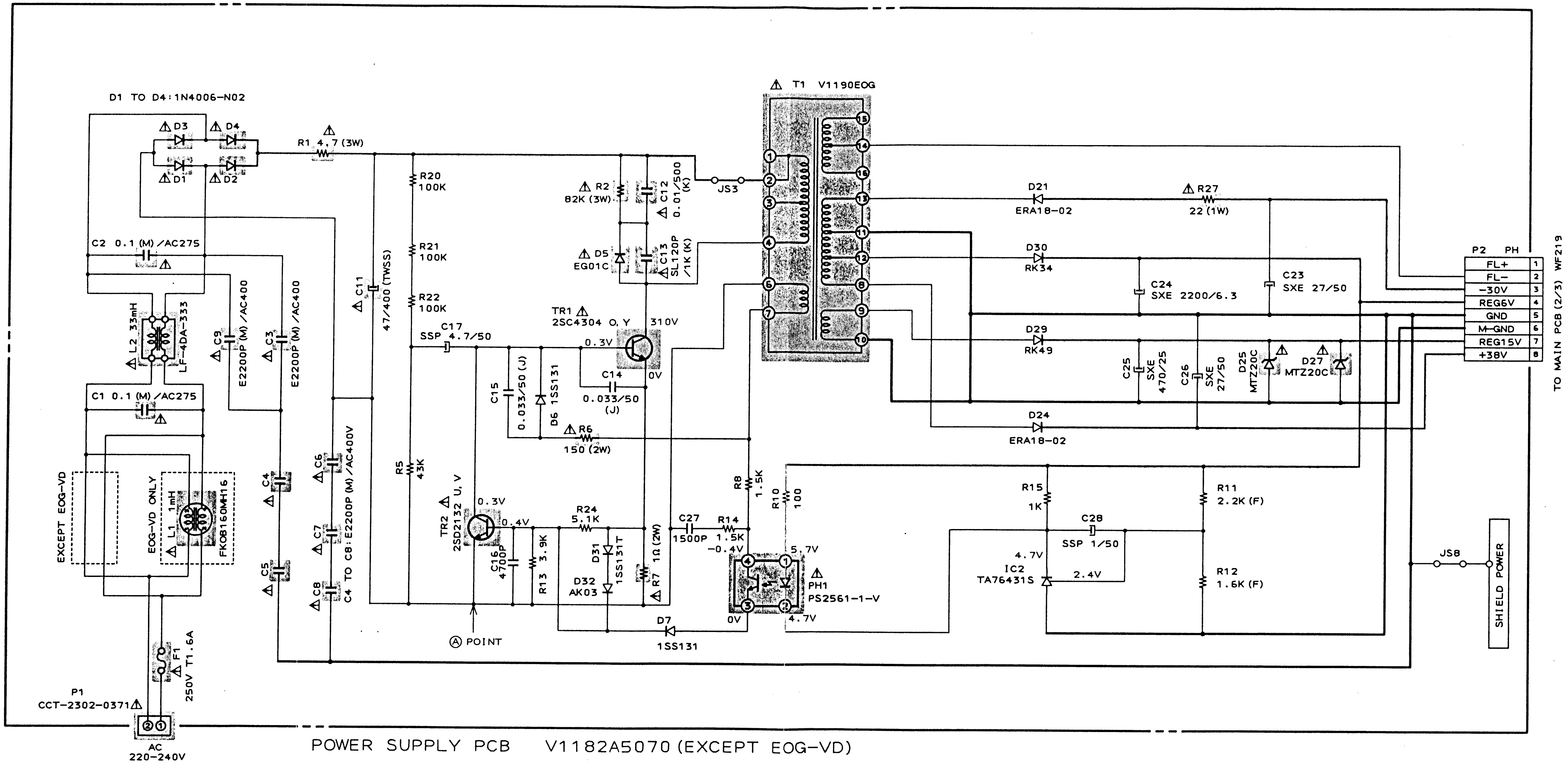

A
B
C
D
E
F
1
2
P185
P101
P172
P131
JS102
L102
VR102
P102
L103
W101
VR101
IC101
W201
W202
W203
W201
C212
TR103
TP101
TP104
TP3
WP128
TP2
TP1
C33
P3
L1
IC1
VR1
P129
P130
P122
WF132
L110
J5106
D107
TR118
TR119
C190

PRE AMP & Hi-Fi PCB VI190A502AJ2

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT
PARTS INFORMATION.

SINGLE CHIP
TRANSISTOR




T1 V1190EOG
D1 TO D4:1N4006-N02
D3
D4
D1
D2
R1 4.7 (3W)
R20 100K
R21 100K
R22 100K
R2 82K (3W)
C12 0.01/500 (K)
JS3
D5 EG01C
C13 SL120P /1K (K)
C2 0.1 (M) /AC275
L2 33mH LF-4DA-333
C9 E2200P (M) /AC400
C3 E2200P (M) /AC400
C11 47/400 (TWSS)
C17 SSP 4.7/50
TR1 2SC4304 O, Y
310V
0.3V
0V
C14 0.033/50 (J)
C15 0.033/50 (J)
D6 1SS131
R6 150 (2W)
C1 0.1 (M) /AC275
EXCEPT EOG-VD
EOG-VD ONLY
L1 1mH
FK0B160MH16
C4
C5
C6
C7
C8
C4 TO C8: E2200P (M) /AC400V
R5 43K
TR2 2SD2132 U, V
0.3V
0.4V
R24 5.1K
C16 4700P
R13 3.9K
D31 1SS131T
D32 AK03
R7 1Ω (2W)
C27 1500P
R14 1.5K
-0.4V
R8 1.5K
R10 100
5.7V
PH1 PS2561-1-V
0V
4.7V
D7 1SS131
Ⓐ POINT
F1 250V T1.6A
P1 CCT-2302-0371
AC 220-240V
D21 ERA18-02
R27 22 (1W)
D30 RK34
C24 SXE 2200/6.3
C23 SXE 27/50
D29 RK49
C25 SXE 470/25
C26 SXE 27/50
D25 MTZ20C
D27 MTZ20C
D24 ERA18-02
R15 1K
C28 SSP 1/50
R11 2.2K (F)
R12 1.6K (F)
4.7V
IC2 TA76431S
2.4V
JS8
SHIELD POWER
P2 PH
FL+ 1
FL− 2
−30V 3
REG6V 4
GND 5
M-GND 6
REG15V 7
+38V 8
TO MAIN PCB (2/3) WF219

POWER SUPPLY PCB V1182A5070 (EXCEPT EOG-VD)
POWER SUPPLY PCB V1182A5030 (EOG-VD ONLY)

:B (POWER SUPPLY) LINE

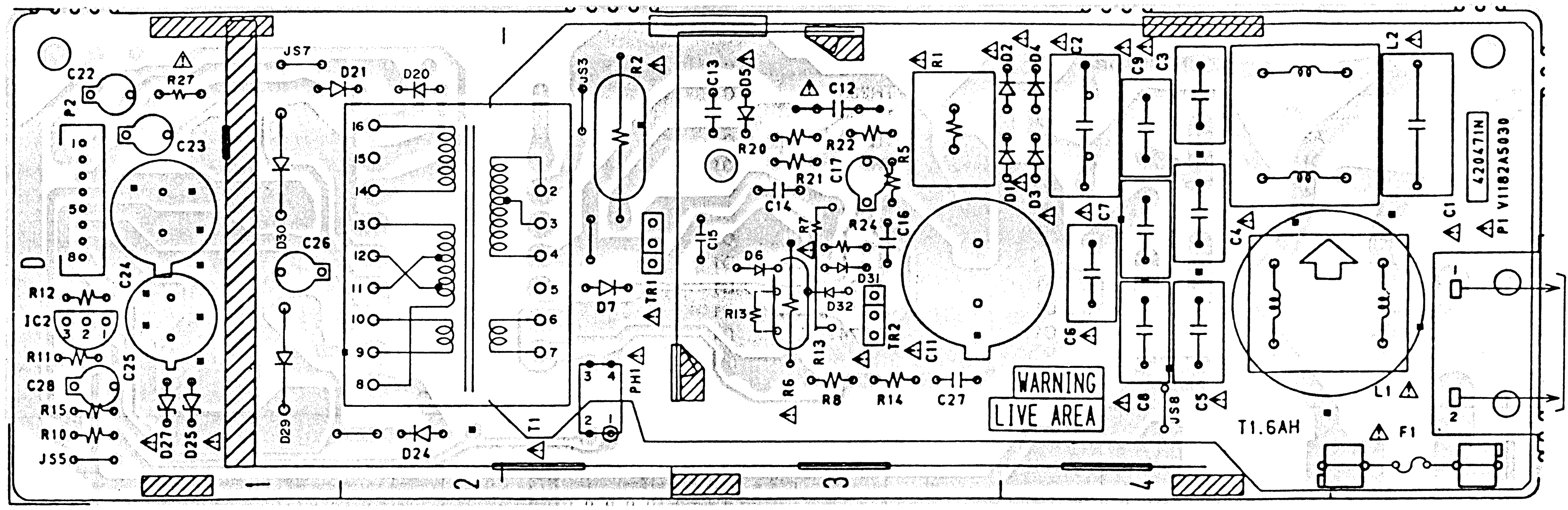
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W (J)
ALL CAPACITORS IN μF (P=PF) 16WV (M)
ALL ELECTROLYTIC CAPACITORS IN μF/WV (M)

*INDICATED VOLTAGES WERE MEASURED DURING E-E MODE.
THE DC VOLTMETER'S NEGATIVE INPUT WAS CONNECTED
TO THE Ⓐ POINT WHEN THE PRIMARY SECTION WAS MEASURED.
*THE PRIMARY INPUT WAS AC 220V.

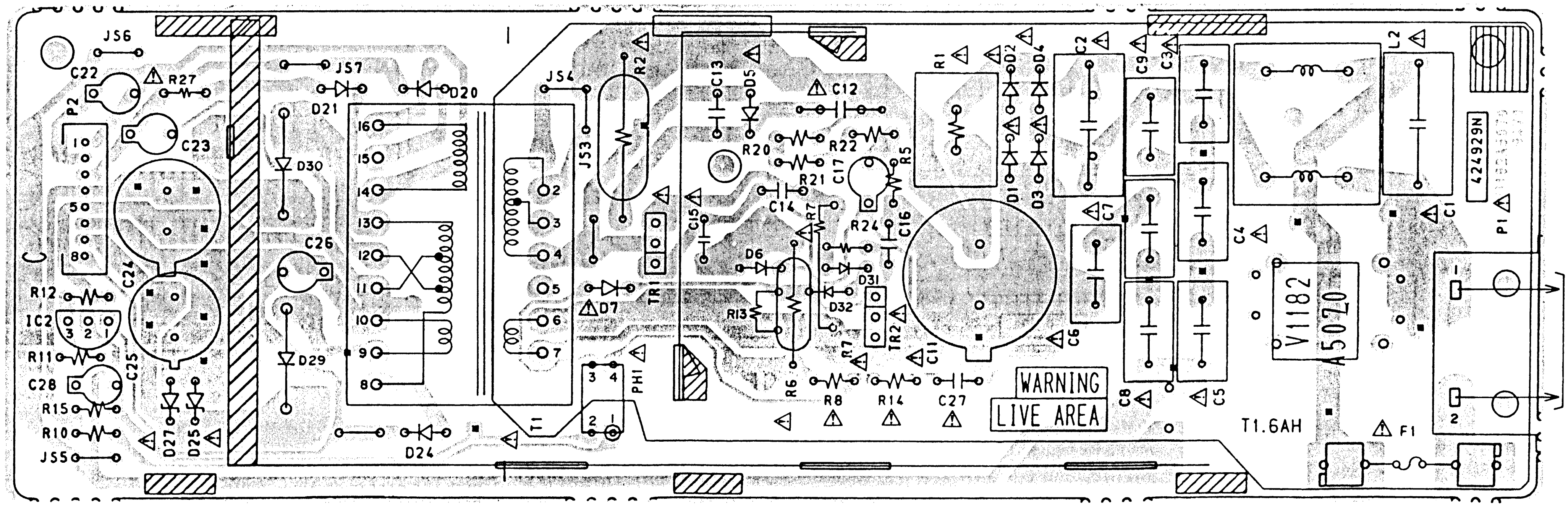
WARNING: ⚠ AND ▨ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSMENT: ⚠ ET ▨, ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

VS-G2100EA-D/EO-D/EOH-DN
VS-G2160EOH-VD
VS-G2200EK-VN/EOG-VD
POWER SUPPLY
SCHEMATIC DIAGRAM
No.19-7 V119415M
A2


C22
R27
P2
C23
1
5
8
C24
C25
R12
IC2
3 2 1
R11
C28
R15
R10
JS5
D27
D25
JS7
D21
D20
16
15
14
13
12
11
10
9
8
2
3
4
5
6
7
D30
C26
D29
D24
T1
JS3
R2
TR1
D7
PH1
3 4
2 1
C13
D5
C12
R20
R22
R21
C17
R5
C14
C15
R7
R24
C16
D6
D31
D32
R13
TR2
C11
R6
R8
R14
C27
WARNING
LIVE AREA
R1
D2
D4
D1
D3
C2
C9
C3
C7
C6
C8
JS8
C5
C4
L2
L1
C1
P1
420471N
V1182A5030
T1.6AH
F1
1
2
TO AC PLUG

POWER SUPPLY PCB V1182A5030J1(EOG-VD ONLY)


JS6
C22
R27
P2
C23
1
5
8
C24
C25
R12
IC2
3 2 1
R11
C28
R15
R10
JS5
D27
D25
JS7
D21
D20
D30
C26
D29
D24
16
15
14
13
12
11
10
9
8
2
3
4
5
6
7
T1
JS4
JS3
R2
TR1
D7
PH1
3 4
2 1
C13
D5
C12
R20
R22
R21
C17
R5
C14
C15
R7
R24
C16
D6
D31
D32
R13
TR2
C11
R6
R8
R14
C27
WARNING
LIVE AREA
R1
D2
D4
D1
D3
C2
C9
C3
C7
C6
C8
C5
C4
L2
C1
P1
424929N
V1182
A5020
T1.6AH
F1
1
2
TO AC PLUG

POWER SUPPLY PCB V1182A5070J1(EXCEPT EOG-VD)

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

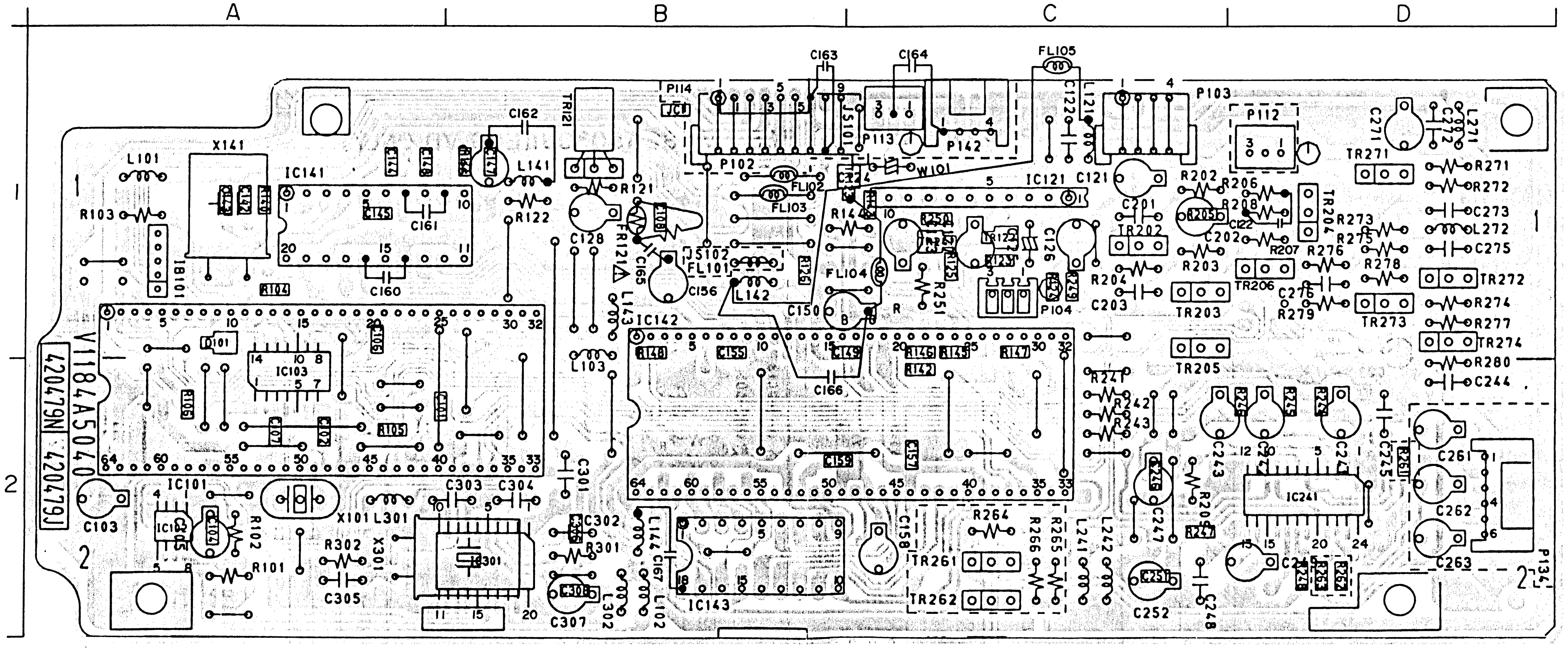
NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.

PRINCIPAL PARTS LOCATION

ICs	
IC101	A1,2
IC102	A2
IC103	A2
IC121	C1
IC141	A1
IC142	B,C2
IC143	B2
IC241	D2
IC301	A,B2

CONNECTORs	
P104	C1
P112	D1
P113	C1
P114	B1
P134	D2
P142	C1

TRANSISTORs	
TR121	B1
TR122	C1
TR123	C1
TR202	C1
TR203	C1
TR204	D1
TR205	C1
TR206	D1
TR241	C1
TR261	C2
TR262	C2
TR271	D1
TR272	D1
TR273	D1
TR274	D1

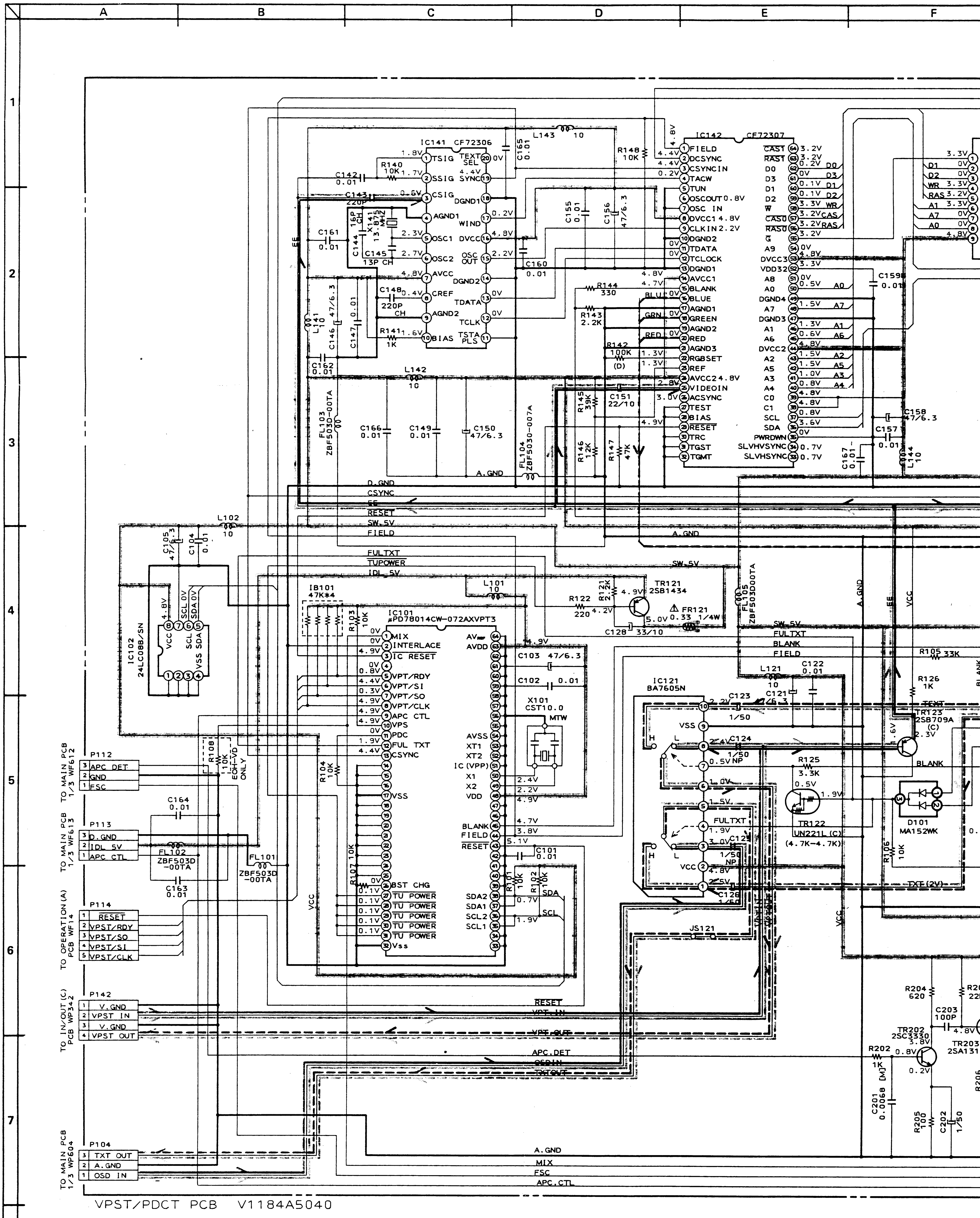

A
B
C
D
1
2
V1184A5040
4204791
IC101
IC103
IC141
IC142
IC143
IC121
IC241
IC301
P102
P103
P104
P112
P113
P114
P134
P142

VPST/PDCT PCB V1184A5040

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.



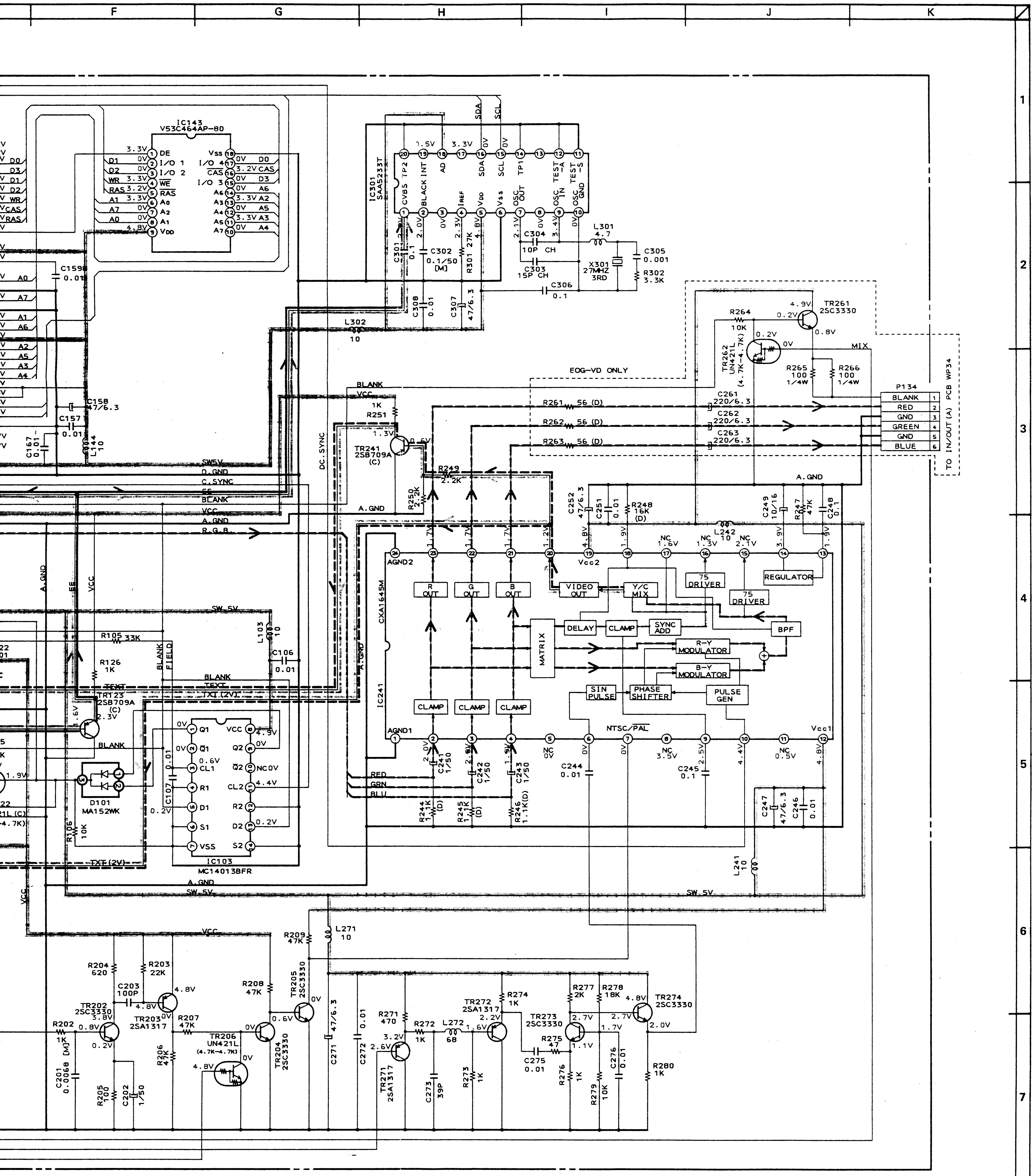
A
B
C
D
E
F
1
2
3
4
5
6
7
8
IC141 CF72306
TSIG
SSIG
CSIG
AGND1
OSC1
OSC2
AVCC
CREF
AGND2
BIAS
TEXT SEL
SYNC
DGND1
WIND
DVCC
OSC OUT
DGND2
TDATA
TCLK
TSTA PLS
L143 10
C165 0.01
R140 10K
C142 0.01
C143 22P
X141 13.875MHZ
C144 16P CH
C145 13P CH
C161 0.01
C148 220P CH
R141 1K
L141 10
C146 47/6.3
C147 0.01
C162 0.01
L142 10
C160 0.01
C155 0.01
C156 47/6.3
FL103 ZBF5030-00TA
C166 0.01
C149 0.01
C150 47/6.3
FL104 ZBF5030-007A
A.GND
D.GND
CSYNC
EE
RESET
SW.5V
FIELD
FULTXT
TUPOWER
IDL 5V
IC142 CF72307
FIELD
DCSYNC
CSYNCIN
TACW
TUN
OSCOUT
OSC IN
DVCC1
CLKIN
DGND2
TDATA
TCLOCK
DGND1
AVCC1
BLANK
BLUE
AGND1
GREEN
AGND2
RED
AGND3
RGBSET
REF
AVCC2
VIDEOIN
ACSYNC
TEST
BIAS
RESET
TRC
TGST
TGMT
CAST
RAST
D0
D3
D1
D2
W
CAS0
RAS0
G
A9
DVCC3
VDD32
A8
A0
DGND4
A7
DGND3
A1
A6
DVCC2
A2
A5
A3
A4
C0
C1
SCL
SDA
PWRDWN
SLVHVSYNC
SLVHSYNC
R148 10K
R144 330
R143 2.2K
R142 100K (D)
R145 39K
C151 22/10
R146 12K
R147 47K
C159 0.01
C158 47/6.3
C157 0.01
C167 0.01
L144 10
L102 10
C105 47/6.3
C104 0.01
IC102 24LC08B/SN
VCC
SCL
SDA
VSS
IB101 47K*4
R103 10K
IC101 μPD78014CW-072AXVPT3
MIX
INTERLACE
IC RESET
VPT/RDY
VPT/SI
VPT/SO
VPT/CLK
APC CTL
VPS
PDC
FUL TXT
CSYNC
VSS
BST CHG
TU POWER
Vss
AV
AVDD
AVSS
XT1
XT2
IC (VPP)
X1
X2
VDD
BLANK
FIELD
RESET
SDA2
SDA1
SCL2
SCL1
C103 47/6.3
C102 0.01
X101 CST10.0 MTW
C101 0.01
R101 10K
R102 10K
R104 10K
R107 10K
R108 10K EOH-VD ONLY
L101 10
TR121 2SB1434
R121 2.2K
R122 220
⚠ FR121 0.33 1/4W
C128 33/10
FL105 ZBF503D00TA
IC121 BA7605N
L121 10
C122 0.01
C121 /6.3
C123 1/50
C124 1/50
C127 1/50 NP
C126 1/50
R125 3.3K
TR122 UN221L (C) (4.7K-4.7K)
JS121
TR123 2SB709A (C)
D101 MA152WK
R105 33K
R126 1K
R106 10K
TEXT
BLANK
TXT (2V)
FULTXT
VSS
VCC
H
L
R204 620
C203 100P
TR202 2SC3330
TR203 2SA131
R202 1K
C201 0.0068 (M)
R205 100
C202 1/50
TO MAIN PCB 1/3 WF612
P112
APC DET
GND
FSC
TO MAIN PCB 1/3 WF613
P113
D.GND
IDL 5V
APC CTL
C164 0.01
FL102 ZBF503D -00TA
C163 0.01
FL101 ZBF503D -00TA
TO OPERATION (A) PCB WF14
P114
RESET
VPST/RDY
VPST/SO
VPST/SI
VPST/CLK
TO IN/OUT (C) PCB WP342
P142
V.GND
VPST IN
V.GND
VPST OUT
VPT IN
VPT OUT
APC DET
OSD IN
TXT OUT
TO MAIN PCB 1/3 WP604
P104
TXT OUT
A.GND
OSD IN
MIX
FSC
APC.CTL
VPST/PDCT PCB V1184A5040

B (POWER SUPPLY) LINE
Y IN (TUNER) SIGNAL LINE
Y VPT SIGNAL LINE
CHROMA IN (TUNER) SIGNAL LINE
CHROMA VPT SIGNAL LINE

NOTE:
UNLESS OTHERWISE SPECIFIED
0.01μF /0.1μF CAPACITORS IN 25WV
ALL CAPACITORS IN μF (P=PF) 50WV (J)
ALL RESISTORS IN OHMS 1/4W (J) or 1/10W (J)
ALL ELECTROLYTIC CAPACITORS IN μF/WV
ALL INDUCTORS IN μF (J)

INDICATED VOLTAGES WERE MEASURED
WHEN A PDC SIGNAL WAS BEING RECEIVED.

WARNING: ⚠ AND ▨ INDICATE SAFETY
COMPONENTS FOR CONTINUED S
REPLACE SAFETY CRITICAL CO
ONLY WITH MANUFACTURER' S R
PARTS
AVERTISSMENT: ⚠ ET ▨, ILS INDIQU
COMPOSTANTS CRITIQUES DE S
POUR MAINTENIR LE DEGRÉ DE
DE L' APPAREIL, NE REMPLACER
PIÈCES RECOMMANDEES PAR LE


F
G
H
I
J
K
1
2
3
4
5
6
7
8
IC143
V53C464AP-80
DE
I/O 1
I/O 2
WE
RAS
A0
A2
A1
VDD
Vss
I/O 4
CAS
I/O 3
A6
A3
A4
A5
A7
C159
0.01
C158
47/6.3
C157
0.01
C167
0.01
L144
10
IC301
SAA5233T
CVBS
TP2
BLACK INT
AD
SDA
SCL
TP1
TEST -A
TEST -S
IREF
VDD
VSS
OSC OUT
OSC IN
OSC GND
C301
C302
0.1/50
[M]
R301 27K
C304
10P CH
C303
15P CH
L301
4.7
X301
27MHZ
3RD
C305
0.001
R302
3.3K
C306
0.1
C308
0.01
C307
47/6.3
L302
10
TR261
2SC3330
R264
10K
TR262
UN421L
(4.7K-4.7K)
R265
100
1/4W
R266
100
1/4W
MIX
EOG-VD ONLY
P134
BLANK
RED
GND
GREEN
GND
BLUE
TO IN/OUT (A) PCB WP34
R261 56 (D)
R262 56 (D)
R263 56 (D)
C261
220/6.3
C262
220/6.3
C263
220/6.3
BLANK
VCC
1K
R251
TR241
2SB709A
(C)
DC.SYNC
R249
2.2K
R250
2.2K
A.GND
SW5V
D.GND
C.SYNC
FF
BLANK
VCC
A.GND
R.G.B.
C252
47/6.3
C251
0.01
R248
16K
(D)
C249
10/16
R247
47K
C248
0.1
L242
10
IC241
CXA1645M
AGND2
Vcc2
R OUT
G OUT
B OUT
VIDEO OUT
Y/C MIX
75 DRIVER
75 DRIVER
REGULATOR
DELAY
CLAMP
SYNC ADD
BPF
MATRIX
R-Y MODULATOR
B-Y MODULATOR
SIN PULSE
PHASE SHIFTER
PULSE GEN
CLAMP
CLAMP
CLAMP
AGND1
NTSC/PAL
Vcc1
C241
1/50
C242
1/50
C243
1/50
C244
0.01
C245
0.1
C247
47/6.3
C246
0.01
R244
1.1K
(D)
R245
1.1K
(D)
R246
1.1K(D)
RED
GRN
BLU
L241
10
SW 5V
SW 5V
L103
10
C106
0.01
R105 33K
R126
1K
BLANK
FIELD
TEXT
TXT (2V)
TR123
2SB709A
(C)
D101
MA152WK
R106
10K
C107
0.01
IC103
MC14013BFR
Q1
Q̄1
CL1
R1
D1
S1
VSS
VCC
Q2
Q̄2
CL2
R2
D2
S2
A.GND
SW 5V
VCC
R209
47K
L271
10
R204
620
R203
22K
C203
100P
TR202
2SC3330
TR203
2SA1317
R202
1K
C201
0.0068
[M]
R205
100
C202
1/50
R206
47K
R207
47K
R208
47K
TR206
UN421L
(4.7K-4.7K)
TR205
2SC3330
TR204
2SC3330
C271
47/6.3
C272
0.01
R271
470
TR271
2SA1317
R272
1K
L272
68
C273
39P
TR272
2SA1317
R273
1K
R274
1K
TR273
2SC3330
R275
47
C275
0.01
R276
1K
R277
2K
R278
18K
R279
10K
C276
0.01
TR274
2SC3330
R280
1K

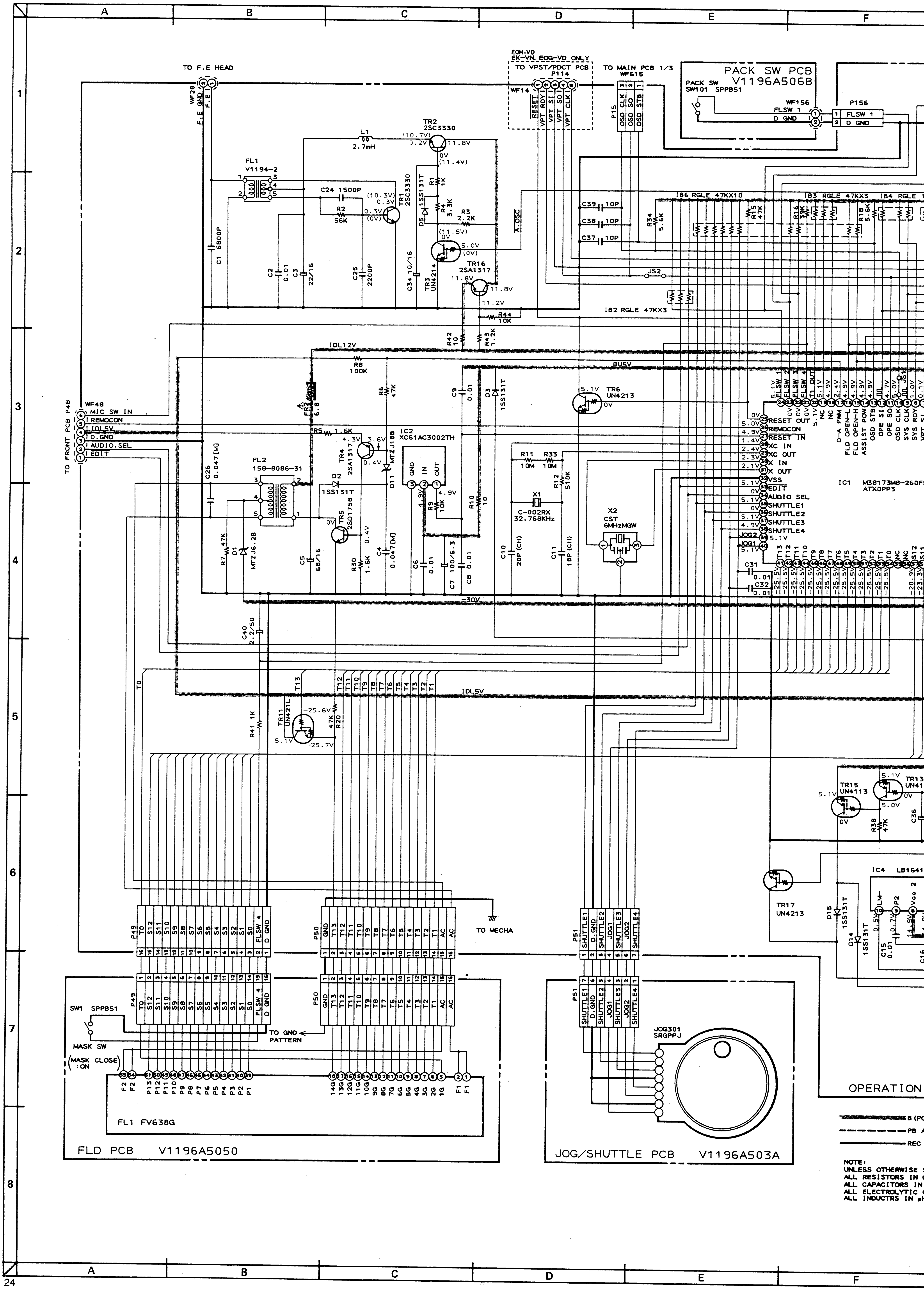
NING: ⚠ AND ▨ INDICATE SAFETY CRITICAL
COMPONENTS FOR CONTINUED SAFETY.
REPLACE SAFETY CRITICAL COMPONENTS
ONLY WITH MANUFACTURER'S RECOMMENDED
PARTS

RTISSMENT: ⚠ ET ▨, ILS INDIQUENT LES
COMPOSTANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ
DE L'APPAREIL, NE REMPLACER QUE DES
PIÈCES RECOMMANDEES PAR LE FABRICANT

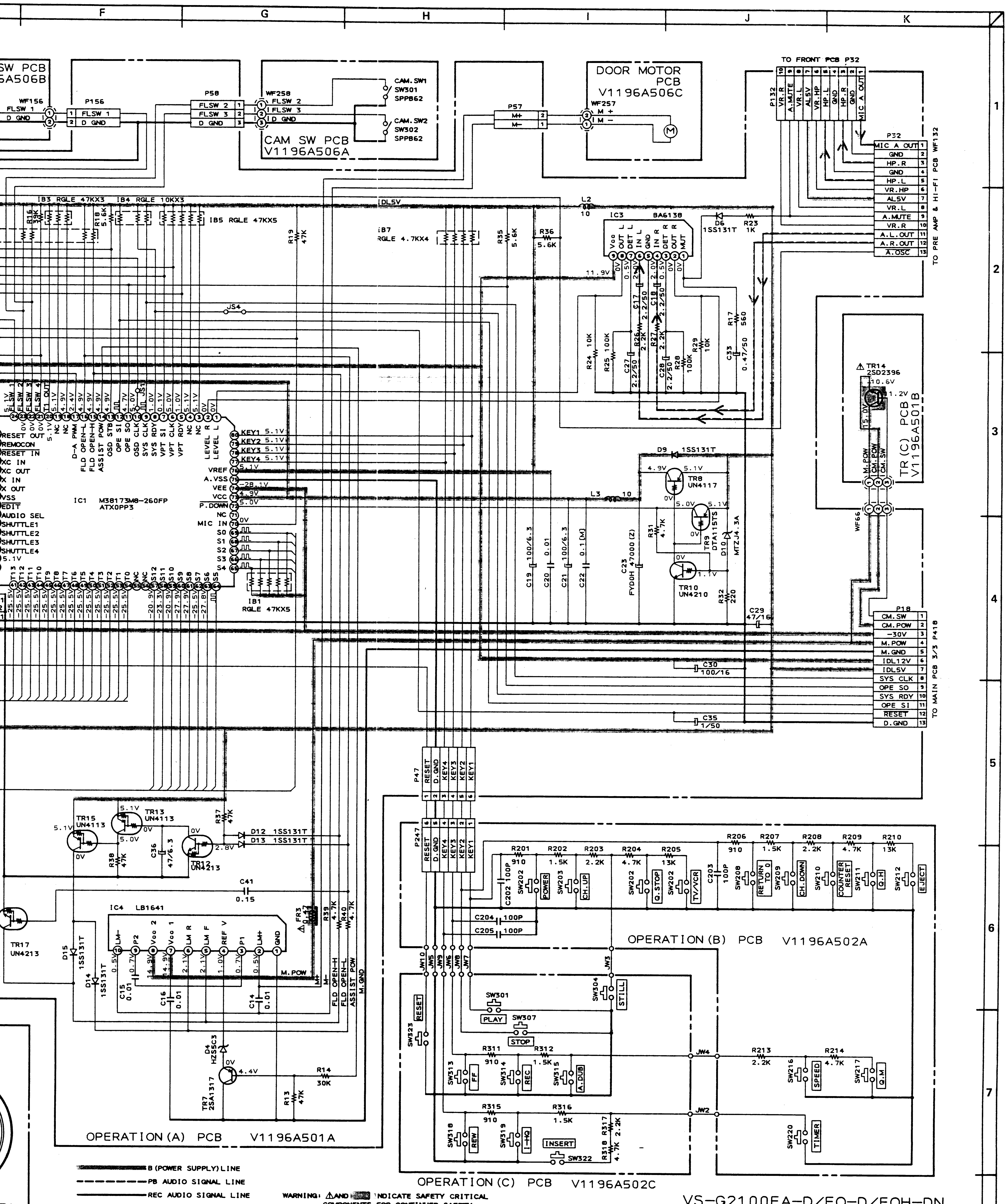
VS-G2160EOH-VD
VS-G2200EK-VN/EOG-VD
VPST/PDCT
SCHEMATIC DIAGRAM

No.19-8 V119411M
A1

F G H I J K


A
B
C
D
E
F
1
2
3
4
5
6
7
8
TO F.E HEAD
WF28
F.E GND
F.E
EOH-VD
EK-VN, EOG-VD ONLY
TO VPST/PDCT PCB
P114
WF14
RESET
VPT RDY
VPT SI
VPT SO
VPT CLK
TO MAIN PCB 1/3
WF615
P15
OSD CLK
OSD SO
OSD STB
PACK SW PCB
V1196A506B
PACK SW
SW101 SPPB51
WF156
FLSW 1
D GND
P156
L1
2.7mH
TR2
2SC3330
FL1
V1194-2
C24 1500P
R2
56K
TR1
2SC3330
D5 1SS131T
R1 1K
R4 3.3K
R3 2.2K
A.OSC
C1 6800P
C2 0.01
C3 22/16
C25 2200P
C34 10/16
TR3 UN4214
TR16
2SA1317
R44 10K
R42 10
R43 1.2K
C39 10P
C38 10P
C37 10P
R34 5.6K
R15 47K
R16 33K
R18 5.6K
IB6 RGLE 47KX10
IB3 RGLE 47KX3
IB4 RGLE
JS2
IB2 RGLE 47KX3
IDL12V
R8 100K
R6 47K
FR2 6.8
C9 0.01
D3 1SS131T
BU5V
TR6 UN4213
TO FRONT PCB P48
WF48
MIC SW IN
REMOCON
IDL5V
D.GND
AUDIO.SEL
EDIT
C26 0.047(M)
FL2
158-8086-31
R5 1.6K
TR4 2SA1317
D11 MTZJ18B
IC2
XC61AC3002TH
GND
IN
OUT
D2 1SS131T
TR5 2SD1758
R7 47K
D1 MTZJ6.2B
C5 68/16
R30 1.6K
C4 0.047(M)
C6 0.01
C7 100/6.3
C8 0.01
R9 10K
R10 10
R11 10M
R33 10M
R12 510K
X1
C-002RX
32.768KHz
C10 20P (CH)
C11 18P (CH)
X2
CST
6MHzMGW
-30V
RESET OUT
REMOCON
RESET IN
XC IN
XC OUT
X IN
X OUT
VSS
EDIT
AUDIO SEL
SHUTTLE1
SHUTTLE2
SHUTTLE3
SHUTTLE4
JOG2
JOG1
C31 0.01
C32 0.01
IC1 M38173M8-260F
ATXOPP3
C40 2.2/50
T0
T13
T12
T11
T10
T9
T8
T7
T6
T5
T4
T3
T2
T1
IDL5V
TR11 UN421L
R20 47K
R41 1K
TR15 UN4113
TR13 UN41
R38 47K
C36
IC4 LB1641
TR17 UN4213
D15 1SS131T
D14 1SS131T
C15 0.01
P49
S12
S11
S10
S9
S8
S7
S6
S5
S4
S3
S2
S1
S0
FLSW 4
D GND
P50
GND
AC
TO MECHA
P51
SHUTTLE1
D.GND
SHUTTLE2
JOG1
SHUTTLE3
JOG2
SHUTTLE4
SW1 SPPB51
MASK SW
(MASK CLOSE) :ON
TO GND PATTERN
JOG301
SRGPPJ
FL1 FV638G
F2
P13
P12
P11
P10
P9
P8
P7
P6
P5
P4
P3
P2
P1
14G
13G
12G
11G
10G
9G
8G
7G
6G
5G
4G
3G
2G
1G
F1
FLD PCB V1196A5050
JOG/SHUTTLE PCB V1196A503A
OPERATION
B (PC
PB A
REC

NOTE:
UNLESS OTHERWISE S
ALL RESISTORS IN (
ALL CAPACITORS IN
ALL ELECTROLYTIC (
ALL INDUCTRS IN µ


F
G
H
I
J
K
1
2
3
4
5
6
7
8
SW PCB
A506B
WF156
FLSW 1
D GND
P156
FLSW 1
D GND
P58
FLSW 2
FLSW 3
D GND
WF258
CAM.SW1
SW301
SPPB62
CAM.SW2
SW302
SPPB62
CAM SW PCB
V1196A506A
DOOR MOTOR PCB
V1196A506C
WF257
P57
M+
M−
TO FRONT PCB P32
P132
VR.R
A.MUTE
VR.L
AL5V
VR.HP
HP.L
GND
HP.R
GND
MIC A OUT
P32
MIC A OUT
GND
HP.R
GND
HP.L
VR.HP
AL5V
VR.L
A.MUTE
VR.R
A.L.OUT
A.R.OUT
A.OSC
TO PRE AMP & HI-FI PCB WF132
IB3 RGLE 47KX3
IB4 RGLE 10KX3
IB5 RGLE 47KX5
R16
R18 5.6K
R19 47K
IDL5V
IB7 RGLE 4.7KX4
R35 5.6K
R36 5.6K
L2 10
IC3 BA6138
D6 1SS131T
R23 1K
Vcc
OUT L
DET L
IN L
GND
IN R
DET R
OUT R
MUT
11.9V
C17 2.2/50
C18 2.2/50
R26 2.2K
R27 2.2K
R24 10K
R25 100K
C27 2.2/50
C28 2.2/50
R28 100K
R29 10K
R17 560
C33 0.47/50
JS4
⚠TR14 2SD2396
10.6V
1.2V
15.0V
TR(C) PCB V1196A501B
M.POW
CM.POW
CM.SW
WF66
IC1 M38173M8-260FP ATX0PP3
RESET OUT
REMOCON
RESET IN
XC IN
XC OUT
X IN
X OUT
VSS
EDIT
AUDIO SEL
SHUTTLE1
SHUTTLE2
SHUTTLE3
SHUTTLE4
D-A PWM
FLD OPEN-L
FLD OPEN-H
ASSIST POW
OSD STB
OPE SO
OSD CLK
SYS CLK
SYS RDY
VPT SI
VPT CLK
VPT RDY
LEVEL R
LEVEL L
KEY1 5.1V
KEY2 5.1V
KEY3 5.1V
KEY4 5.1V
VREF
A.VSS
VEE −28.1V
VCC 4.9V
P.DOWN 5.0V
NC
MIC IN
S0
S1
S2
S3
S4
IB1 RGLE 47KX5
D9 1SS131T
TR8 UN4117
L3 10
TR9 DTA115TS
D10 MTZJ4.3A
R31 4.7K
TR10 UN4210
R32 220
C19 100/6.3
C20 0.01
C21 100/6.3
C22 0.1(M)
C23 FYD0H 47000(Z)
C29 47/16
C30 100/16
C35 1/50
P18
CM.SW
CM.POW
−30V
M.POW
M.GND
IDL12V
IDL5V
SYS CLK
OPE SO
SYS RDY
OPE SI
RESET
D.GND
TO MAIN PCB 3/3 P418
P47
RESET
D.GND
KEY4
KEY3
KEY2
KEY1
P247
TR15 UN4113
TR13 UN4113
TR12 UN4213
R37 47K
R38 47K
C36 47/6.3
D12 1SS131T
D13 1SS131T
C41 0.15
IC4 LB1641
LM−
P2
Vcc 2
Vcc 1
LM R
LM F
REF V
P1
LM+
GND
⚠FR3 0.47
R39 4.7K
R40 4.7K
M.POW
FLD OPEN-H
FLD OPEN-L
ASSIST POW
M.GND
TR17 UN4213
D15 1SS131T
D14 1SS131T
C15 0.01
C16 0.01
C14 0.01
D4 HZS5C3
TR7 2SA1317
4.4V
R14 30K
R13 47K
OPERATION (A) PCB V1196A501A
R201 910
R202 1.5K
R203 2.2K
R204 4.7K
R205 13K
R206 910
R207 1.5K
R208 2.2K
R209 4.7K
R210 13K
C202 100P
C203 100P
C204 100P
C205 100P
SW202 POWER
SW203 CH.UP
SW202 Q.STOP
SW202 TV/VCR
SW208 RETURN TO 0
SW209 CH.DOWN
SW210 COUNTER RESET
SW211 Q.H
SW212 EJECT
OPERATION (B) PCB V1196A502A
JW10
JW5
JW8
JW6
JW7
JW3
JW4
JW2
SW301 PLAY
SW307 STOP
SW304 STILL
SW323 RESET
R311 910
R312 1.5K
SW313 FF
SW314 REC
SW315 A.DUB
R213 2.2K
R214 4.7K
SW216 SPEED
SW217 Q.M
R315 910
R316 1.5K
R317 2.2K
R318 4.7K
SW318 REW
SW319 I-HQ
INSERT
SW322
SW220 TIMER
OPERATION (C) PCB V1196A502C
3A
B (POWER SUPPLY) LINE
PB AUDIO SIGNAL LINE
REC AUDIO SIGNAL LINE

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN µF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN µF/WV
ALL INDUCTRS IN µH

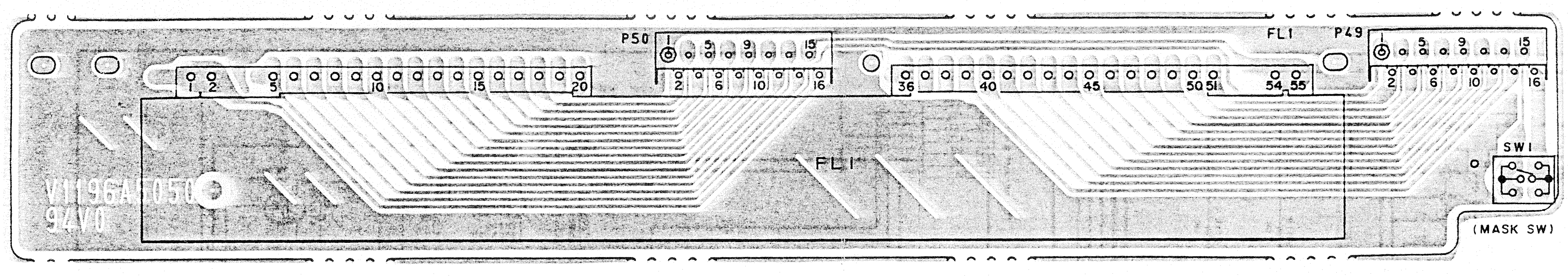
WARNING: ⚠AND ▨ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSMENT: ⚠ ET ▨, ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

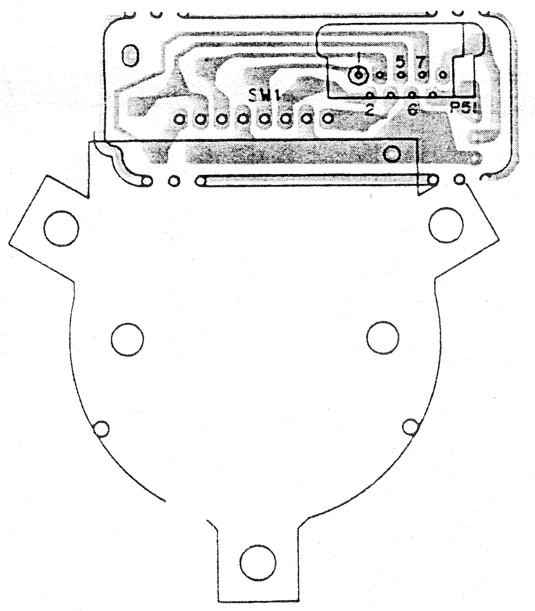
INDICATED VOLTAGES WERE MEASURED DURING PB MODE.
( ) : REC MODE

VS-G2100EA-D/EO-D/EOH-DN
VS-G2160EOH-VD
VS-G2200EK-VN/EOG-VD
OPERATION
SCHEMATIC DIAGRAM

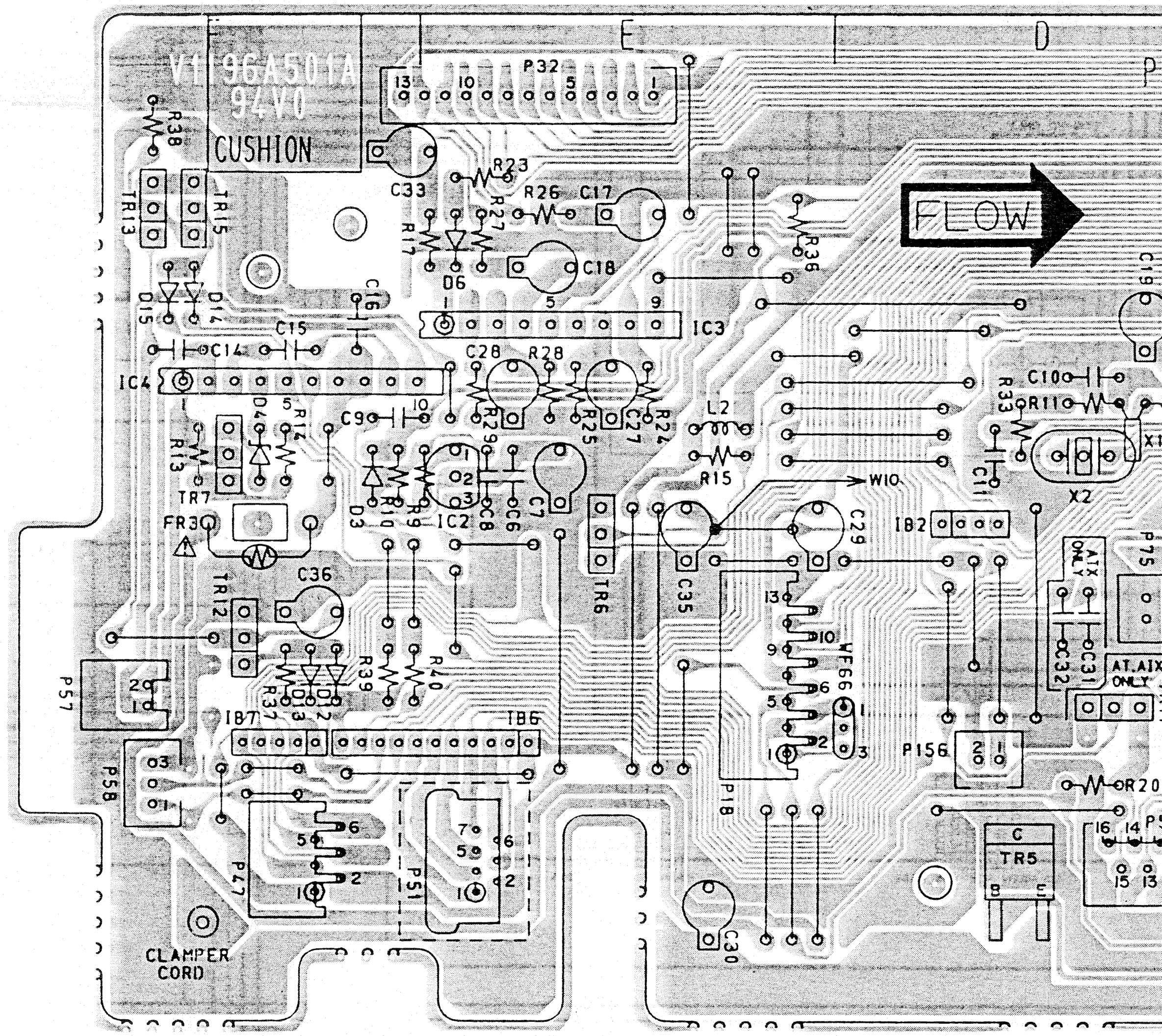
No.19-9 V119607M
A1


P50
FL1
P49
SW1
(MASK SW)
V1196A5050
94V0

FLD PCB V1196A5050



JOG/SHUTTLE PCB V1196A503A

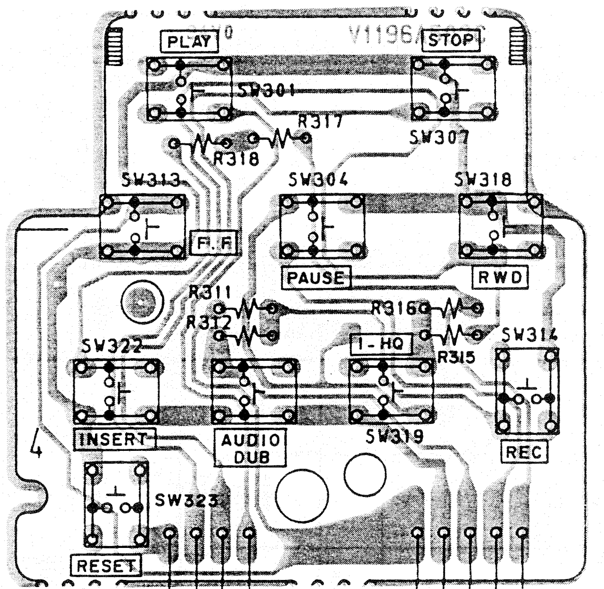

V1196A501A
94V0
CUSHION
P32
FLOW
IC3
IC4
IC2
TR13
TR15
TR7
TR12
TR6
TR5
FR3
P57
P58
P47
P51
P18
P156
CLAMPER CORD
W10
X2
AT.AIX ONLY

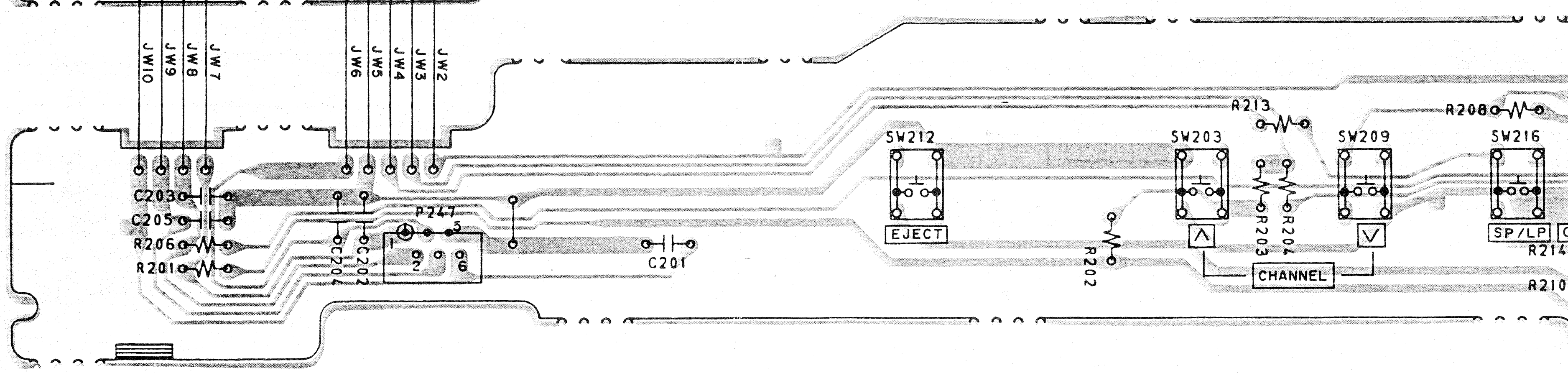
OPERATION (A) PC

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY.
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS

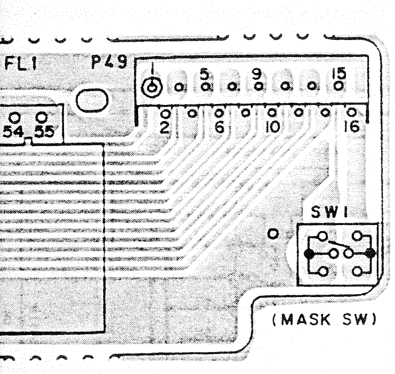
AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL,
NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

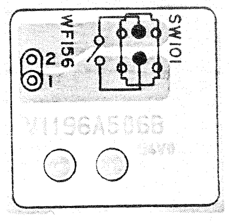
OPERATION (C) PCB V1196A502C


PLAY
STOP
SW301
SW307
SW313
SW304
SW318
F.F
PAUSE
RWD
SW322
I-HQ
SW314
INSERT
AUDIO DUB
SW319
REC
SW323
RESET

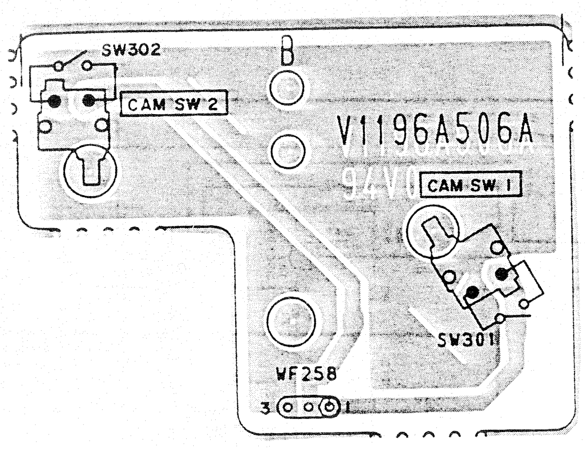

JW10
JW9
JW8
JW7
JW6
JW5
JW4
JW3
JW2
P247
C201
SW212
EJECT
SW203
SW209
SW216
CHANNEL
SP/LP

OPERATION (B) PCB V1196A502A

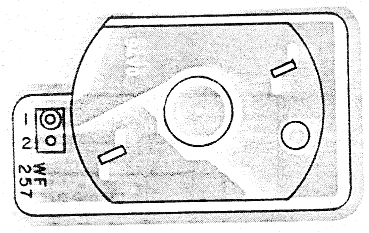

FL1
P49
SW1
(MASK SW)
54 55


WF156
SW101
V1196A506B

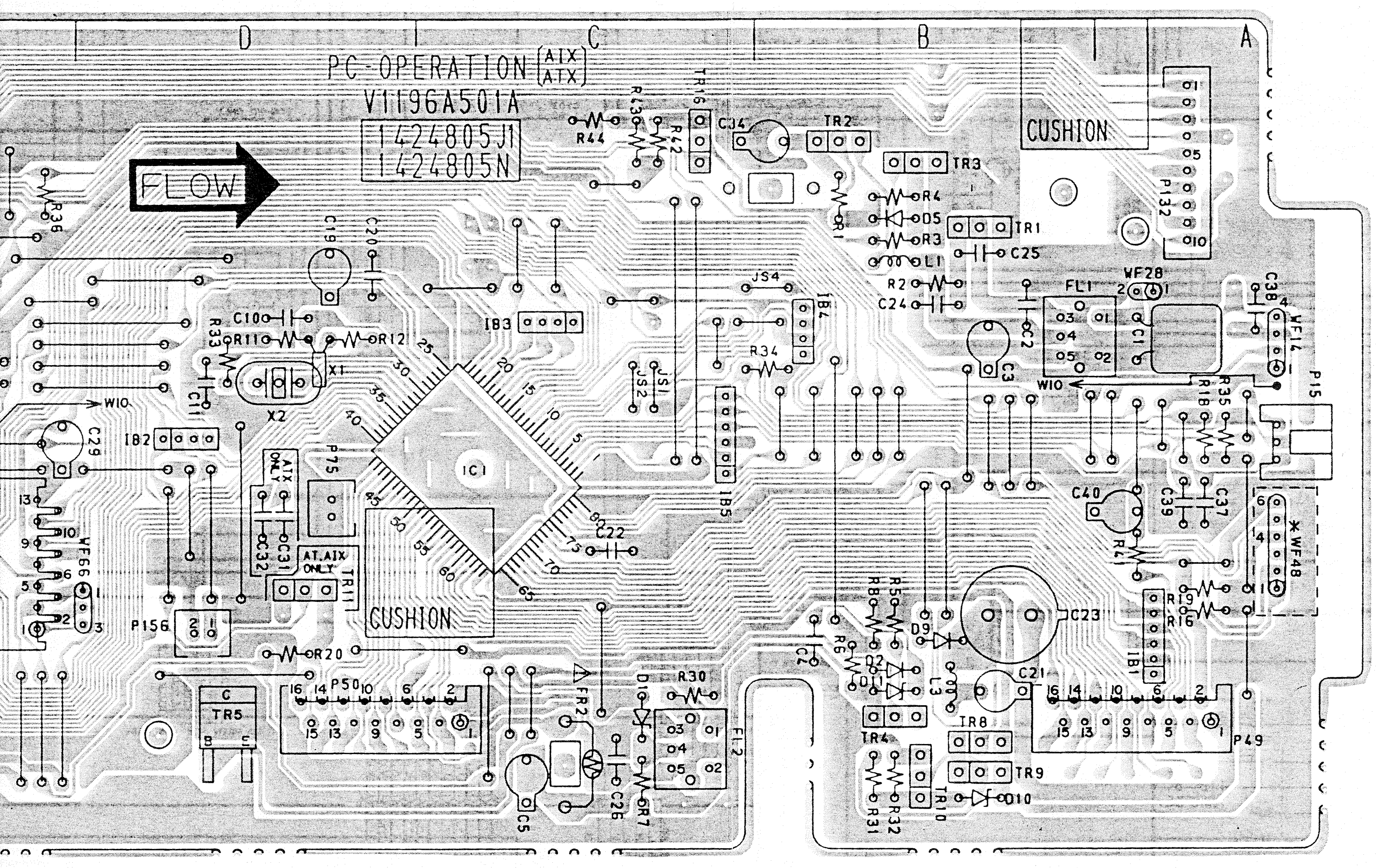
PACK SW PCB
V1196A506B


SW302
CAM SW 2
V1196A506A
94V0
CAM SW 1
SW301
WF258

CAM SW PCB V1196A506A

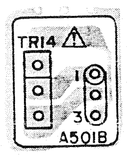


DOOR MOTOR PCB
V1196A506C


D
C
B
A
PC-OPERATION (A1X / A1X)
V1196A501A
1424805J1
1424805N
FLOW
CUSHION
IC1
X1
X2
TR1
TR2
TR3
TR4
TR5
TR8
TR9
TR10
TR11
TR16
IB1
IB2
IB3
IB4
IB5
P15
P49
P50
P75
P132
P156
FL1
FL2
WF10
WF14
WF28
*WF48
WF66
AT. AIX ONLY
AIX ONLY
FR2

OPERATION(A) PCB V1196A501AJ1

⁎ WF 48
G800 SERISE : 3P~6P
G2000 SERISE : 1P~6P

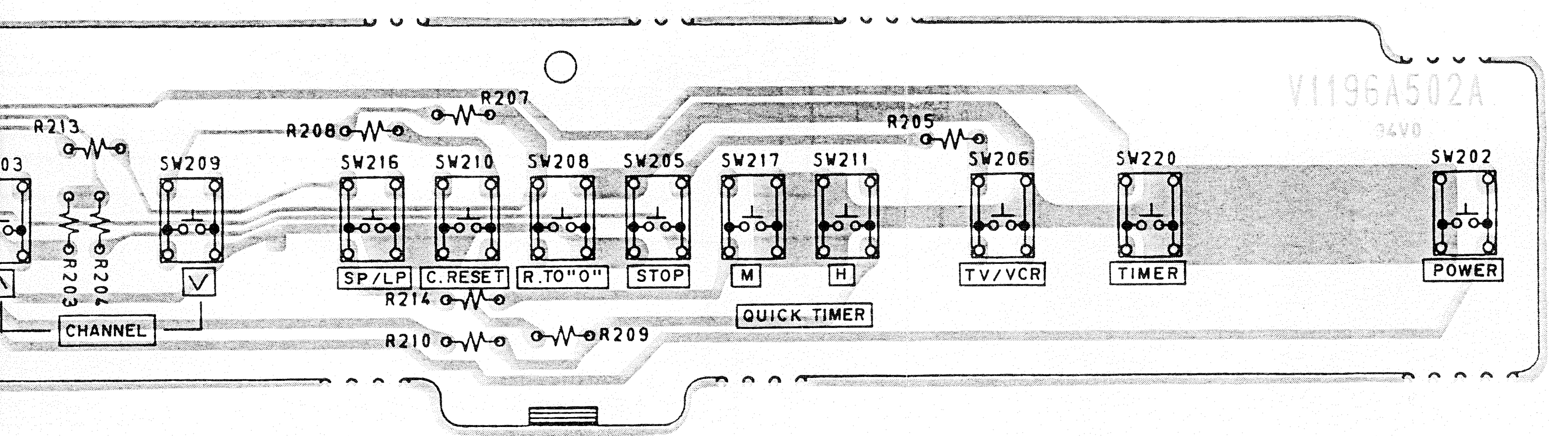


TR(C) PCB
V1196A501BJ1

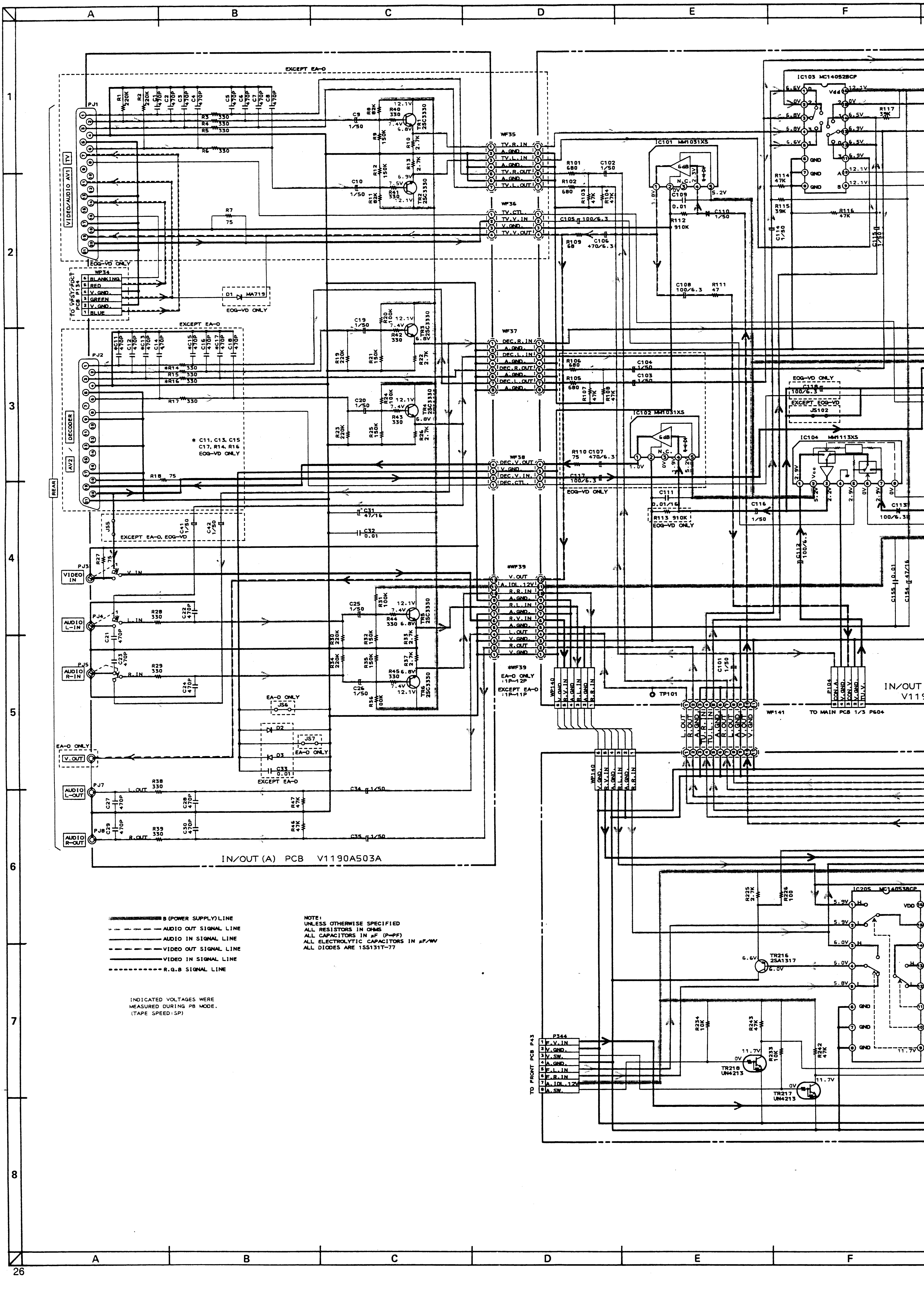
COMPONENTS FOR CONTINUED SAFETY,
MPONENTS ONLY WITH MANUFACTURER'S

OSANTS CRITIQUES DE SÉCURITÉ.
SÉCURITÉ DE L'APPAREIL.
S RECOMMANDEES PAR LE FABRICANT

NOTE : PARTS DIFFER DEPENDING ON MODEL N
REFER TO SCHEMATIC DIAGRAMS FOR PER
PARTS INFORMATION.


V1196A502A
94V0
R213
R208
R207
R205
SW209
SW216
SW210
SW208
SW205
SW217
SW211
SW206
SW220
SW202
R203
R204
SP/LP
C.RESET
R.TO"0"
STOP
M
H
TV/VCR
TIMER
POWER
R214
CHANNEL
QUICK TIMER
R210
R209

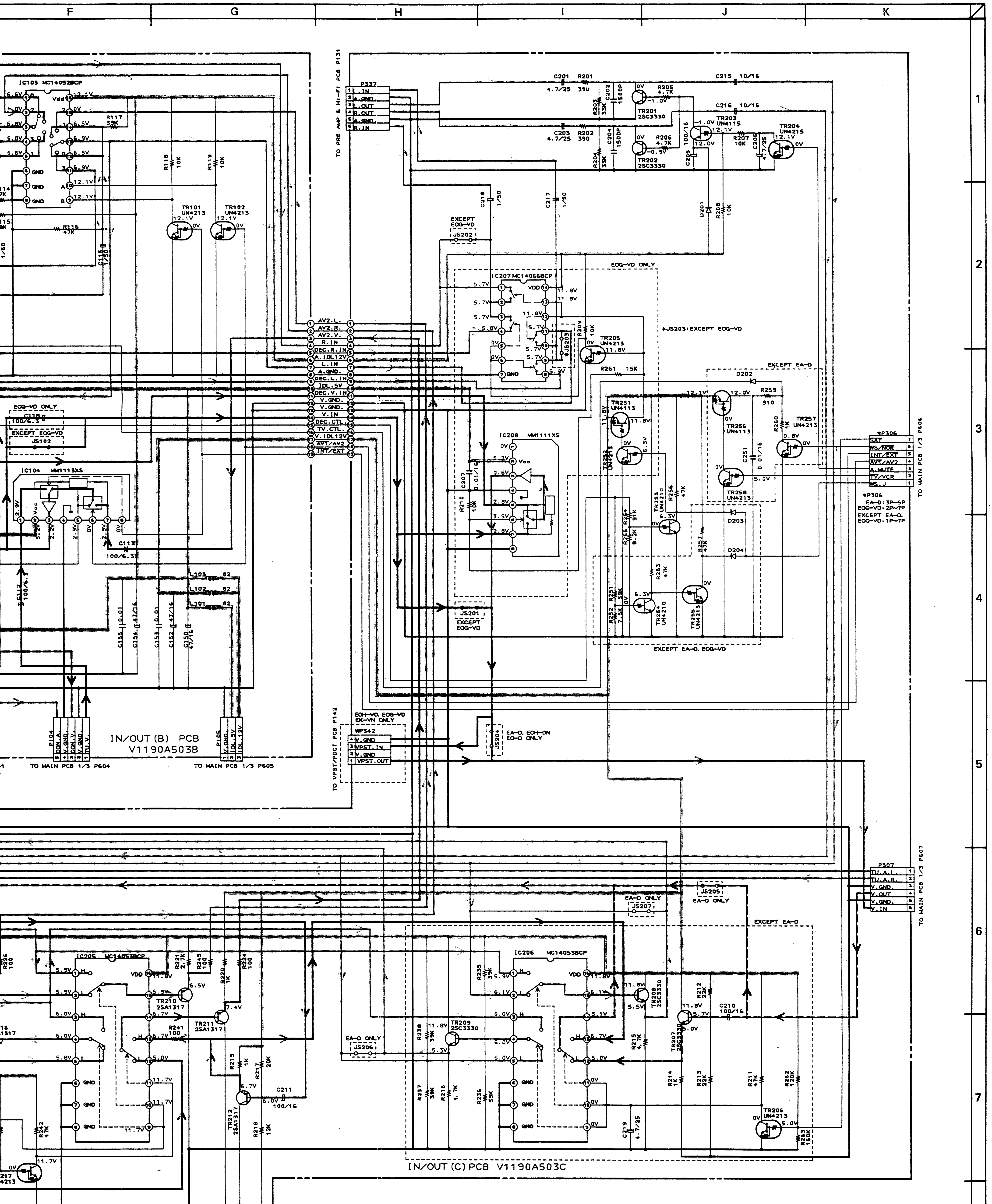
ON (B) PCB V1196A502A


A
B
C
D
E
F
1
2
3
4
5
6
7
8
EXCEPT EA-O
PJ1
VIDEO/AUDIO AV1
TV
R1 220K
R2 220K
C1 470P
C2 470P
C3 470P
C4 470P
C5 470P
C6 470P
C7 470P
C8 470P
R3 330
R4 330
R5 330
R6 330
R7 75
C9 1/50
C10 1/50
R8 82K
R9 150K
R10 2.7K
R11 82K
R12 150K
R13 2.7K
R40 330
R41 330
TR1 2SC3330
TR2 2SC3330
12.1V
7.4V
6.8V
6.9V
7.5V
WF35
TV.R.IN
A.GND.
TV.L.IN
A.GND.
TV.R.OUT
A.GND.
TV.L.OUT
WF36
TV.CTL.
TV.V.IN
TV.GND.
TV.V.OUT
EOG-VD ONLY
WF34
BLANKING
RED
V.GND.
GREEN
V.GND.
BLUE
TO VPST/PDCT PCB P134
D1 MA719
EOG-VD ONLY
EXCEPT EA-O
PJ2
C11 470P
C12 470P
C13 470P
C14 470P
C15 470P
C16 470P
C17 470P
C18 470P
R14 330
R15 330
R16 330
R17 330
AV2
DECODER
REAR
* C11, C13, C15 C17, R14, R16 EOG-VD ONLY
R18 75
C19 1/50
C20 1/50
R19 220K
R20 100K
R21 150K
R22 2.7K
R23 220K
R24 100K
R25 150K
R26 2.7K
R42 330
R43 330
TR3 2SC3330
TR4 2SC3330
WF37
DEC.R.IN
A.GND.
DEC.L.IN
A.GND.
DEC.R.OUT
A.GND.
DEC.L.OUT
A.GND.
WF38
DEC.V.OUT
V.GND.
DEC.V.IN.
DEC.CTL.
JS5
EXCEPT EA-O, EOG-VD
C41 1/50
C42 1/50
C31 47/16
C32 0.01
PJ3
VIDEO IN
R27 75
V.IN
PJ4
AUDIO L-IN
R28 330
L.IN
C21 470P
C22 470P
PJ5
AUDIO R-IN
R29 330
R.IN
C23 470P
C24 470P
C25 1/50
C26 1/50
R30 220K
R31 100K
R32 150K
R33 2.7K
R34 220K
R35 150K
R36 100K
R37 2.7K
R44 330
R45 330
TR5 2SC3330
TR6 2SC3330
*WF39
V.OUT
A.IDL.12V
R.R.IN
A.GND.
R.L.IN
A.GND.
R.V.IN
A.GND.
L.OUT
V.GND.
R.OUT
V.GND.
*WF39
EA-O ONLY :1P-12P
EXCEPT EA-O :1P-11P
EA-O ONLY
JS6
D2
D3
JS7
EA-O ONLY
C33 0.01
EXCEPT EA-O
EA-O ONLY
V.OUT
PJ7
AUDIO L-OUT
L.OUT
R38 330
C27 470P
C28 470P
R47 47K
C34 1/50
PJ8
AUDIO R-OUT
R.OUT
R39 330
C29 470P
C30 470P
R46 47K
C35 1/50
IN/OUT (A) PCB V1190A503A
IC101 MM1031XS
6dB
N.C.
R101 680
R102 680
C102 1/50
R103 47K
R104 47K
C109 0.01
R112 910K
C110 1/50
C105 100/6.3
R109 68
C106 470/6.3
C108 100/6.3
R111 47
5.2V
1.8V
IC102 MM1031XS
R106 680
R105 680
C104 1/50
C103 1/50
R107 47K
R108 47K
R110 75
C107 470/6.3
C117 100/6.3
EOG-VD ONLY
C111 0.01/16
R113 910K
EOG-VD ONLY
C116 1/50
C112 100/6.3
TP101
C101 1/50
WF140
WF141
L.OUT
R.OUT
A.GND.
TU.L.IN
A.GND.
TU.R.IN
V.OUT
V.GND.
V.IN
IC103 MC14052BCP
Vdd
R117 39K
R114 47K
R115 39K
R116 47K
C114 1/50
C115 1/50
GND
12.1V
6.6V
6.8V
6.9V
6.5V
EOG-VD ONLY
C118 100/6.3
EXCEPT EOG-VD
JS102
IC104 MM1113XS
Vcc
C113 100/6.3
C155 0.01
C154 47/16
P104
CON.A.
V.GND.
CON.V.
V.GND.
TU.V.
TO MAIN PCB 1/3 P604
IN/OUT
V119
P344
F.V.IN
V.GND.
V.SW.
A.GND.
F.L.IN
F.R.IN
A.IDL.12V
A.SW.
TO FRONT PCB P43
R225 22K
R226 100
IC205 MC14053BCP
VDD
TR216 2SA1317
6.6V
6.0V
5.9V
5.8V
R234 10K
R243 47K
R233 10K
R242 47K
TR218 UN4213
TR217 UN4213
11.7V
0V
GND

B (POWER SUPPLY) LINE
AUDIO OUT SIGNAL LINE
AUDIO IN SIGNAL LINE
VIDEO OUT SIGNAL LINE
VIDEO IN SIGNAL LINE
R.G.B SIGNAL LINE

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN µF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN µF/WV
ALL DIODES ARE 1SS131T-77

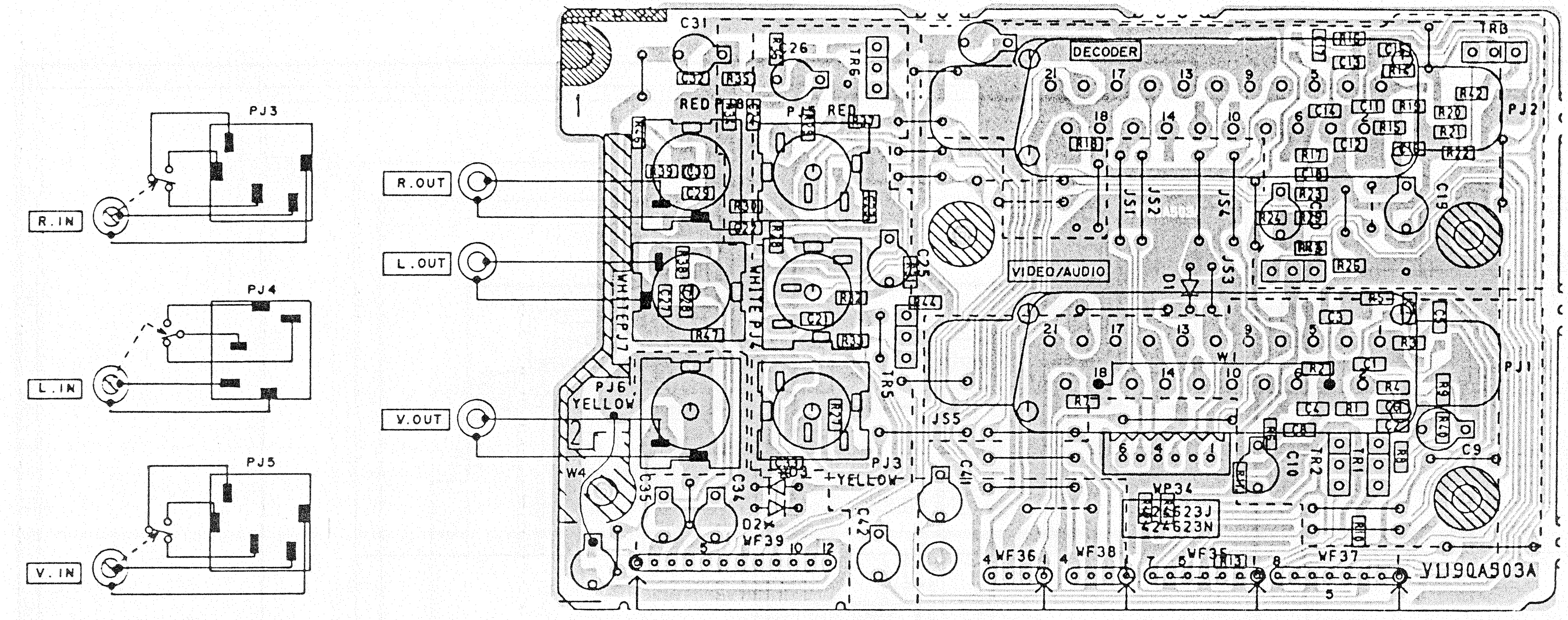
INDICATED VOLTAGES WERE
MEASURED DURING PB MODE.
(TAPE SPEED: SP)



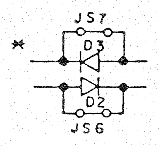
F
G
H
I
J
K
1
2
3
4
5
6
7
8
IC103 MC14052BCP
TO PRE AMP & HI-FI PCB P131
P337
L.IN
A.GND.
L.OUT
R.OUT
A.GND.
R.IN
C201 4.7/25
R201 390
C202 1500P
R203 33K
TR201 2SC3330
R205 4.7K
C215 10/16
C216 10/16
TR203 UN4115
TR204 UN4215
C203 4.7/25
R202 390
C204 1500P
R204 33K
TR202 2SC3330
R206 4.7K
C205 100/16
R207 10K
C206 4.7/25
D201
R208 10K
R117 39K
R118 10K
R119 10K
TR101 UN4213
TR102 UN4213
R116 47K
C218 1/50
C217 1/50
EXCEPT EOG-VD
JS202
EOG-VD ONLY
IC207 MC14066BCP
JS203
R209 10K
TR205 UN4213
*JS203:EXCEPT EOG-VD
R261 15K
EXCEPT EA-D
D202
R259 910
TR251 UN4113
TR256 UN4113
R260 1K
TR257 UN4213
*P306
SAT
WS/NOR
INT/EXT
AVT/AV2
A.MUTE
TV/VCR
WS.J
TO MAIN PCB 1/3 P606
*P306
EA-D:3P-5P
EOG-VD:2P-7P
EXCEPT EA-D,
EOG-VD:1P-7P
AV2.L.
AV2.R.
AV2.V.
R.IN
DEC.R.IN
A.IDL12V
L.IN
A.GND.
DEC.L.IN
IDL.5V
DEC.V.IN
V.GND.
V.GND.
V.IN
DEC.CTL.
TV.CTL.
V.IDL12V
AVT/AV2
INT/EXT
EOG-VD ONLY
C116 100/6.3
EXCEPT EOG-VD
JS102
IC104 MM1113XS
C113 100/6.3
C112 100/6.3
IC208 MM1111XS
C207 0.01/16
R210 10K
TR252 UN4213
C251 0.01/16
TR258 UN4213
R256 47K
TR253 UN4210
R254 91K
R255 8.2K
D203
R257 47K
D204
R253 47K
R251 15K
R252 7.5K
TR254 UN4210
TR255 UN4213
EXCEPT EA-D, EOG-VD
L103 82
L102 82
L101 82
C155 0.01
C154 47/16
C153 0.01
C152 47/16
C150 47/16
JS201
EXCEPT EOG-VD
P104
CON.A.
V.GND.
CON.V.
V.GND.
TU.V.
TO MAIN PCB 1/3 P604
IN/OUT (B) PCB
V1190A503B
P105
V.GND.
IDL.5V
IDL.12V
TO MAIN PCB 1/3 P605
EOH-VD, EOG-VD
EK-VN ONLY
WP342
V.GND
VPST.IN
V.GND
VPST.OUT
TO VPST/DCT PCB P142
JS204
EA-D, EOH-ON
EO-D ONLY
P307
TU.A.L.
TU.A.R.
V.GND.
V.OUT
V.GND.
V.IN
TO MAIN PCB 1/3 P607
JS205
EA-D ONLY
EA-D ONLY
JS207
EXCEPT EA-D
IC205 MC14053BCP
R221 2.7K
R245 100
R220 1K
R224 100
TR210 2SA1317
TR211 2SA1317
R241 100
R219 1K
R217 20K
TR212 2SA1317
C211 100/16
R218 12K
R242 47K
EA-D ONLY
JS206
R238 39K
TR209 2SC3330
R237 39K
R216 4.7K
R236 39K
R235 39K
IC206 MC14053BCP
TR208 2SC3330
R212 22K
C210 100/16
R215 4.7K
TR207 2SC3330
R214 1K
R213 22K
R211 47K
R262 120K
TR206 UN4213
R263 100K
C219 4.7/25
IN/OUT (C) PCB V1190A503C

VS-G2100EA-D/EO-D/EOH-DN
VS-G2160EOH-VD
VS-G2200EK-VN/EOG-VD
IN/OUT
SCHEMATIC DIAGRAM

No.19-10 V119608M
A0


R.IN
L.IN
V.IN
PJ3
PJ4
PJ5
R.OUT
L.OUT
V.OUT
DECODER
VIDEO/AUDIO
V1190A503A

IN/OUT(A) PCB V1190A503A


JS7
D3
D2
JS6
*

PRINCIPAL PARTS LOCATION

ICs

IC101	A2
IC102	B2
IC103	B1
IC104	A2
IC205	D1
IC206	D2
IC207	C1
IC208	C1

CONNECTORs

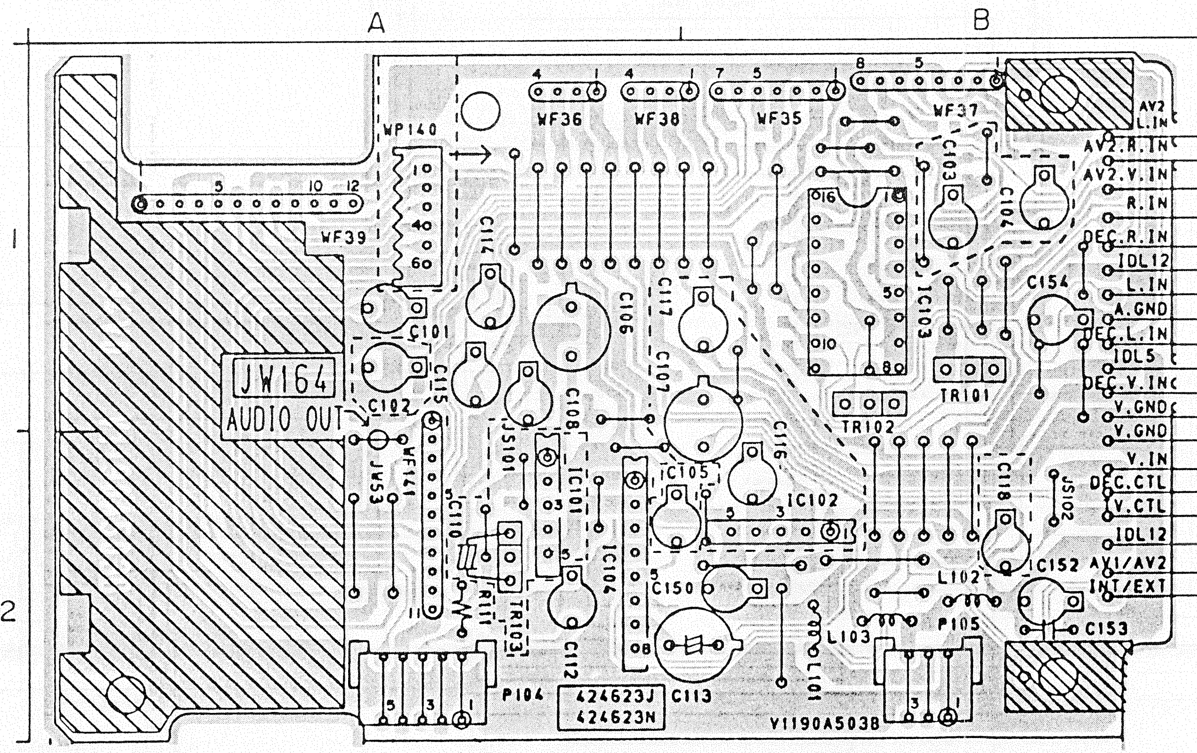
p104	A2
P105	B2
P306	C2
P307	C,D2
P337	C1
P344	D1

WF & WPs

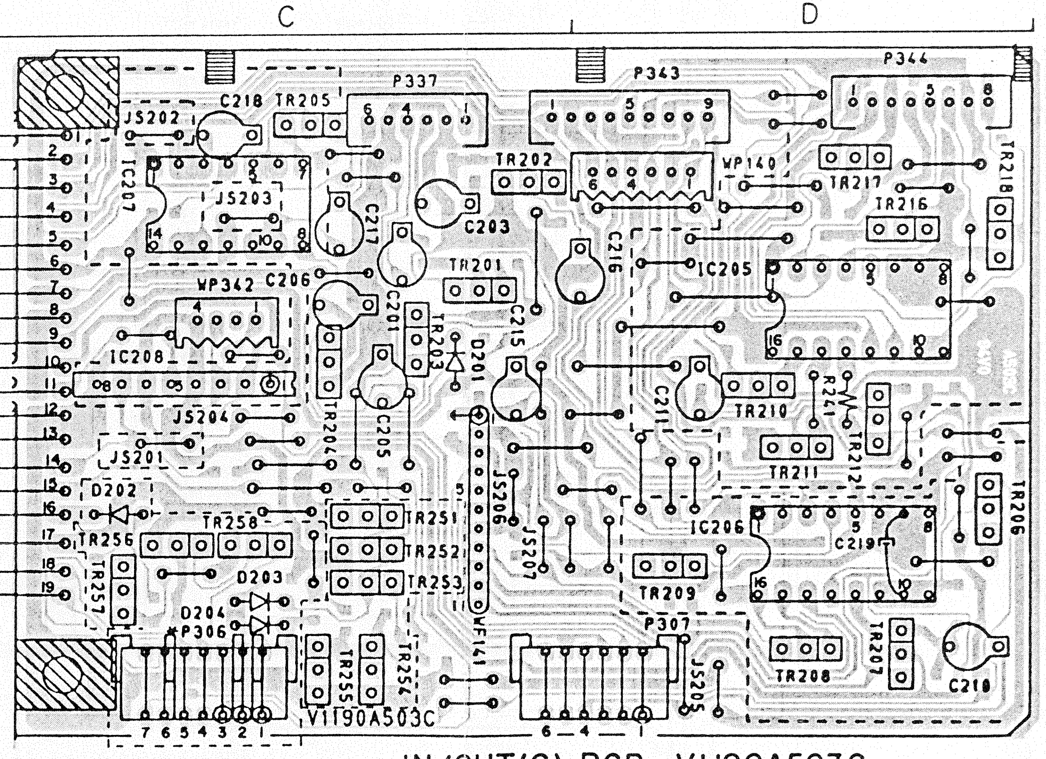
WF141	C2
WP140	A1
WP342	C1

TRANSISTORs

TR101	B1
TR102	B1
TR103	A2
TR201	C1
TR202	C1
TR203	C1
TR204	C1
TR205	C1
TR206	D2
TR207	D2
TR208	D2
TR209	D2
TR210	D1
TR211	D2
TR212	D1,2
TR216	D1
TR217	D1
TR218	D1
TR251	C2
TR252	C2
TR253	C2
TR254	C2
TR255	C2
TR256	C2
TR257	C2
TR258	C2


A
B
1
2
JW164
AUDIO OUT
V1190A503B

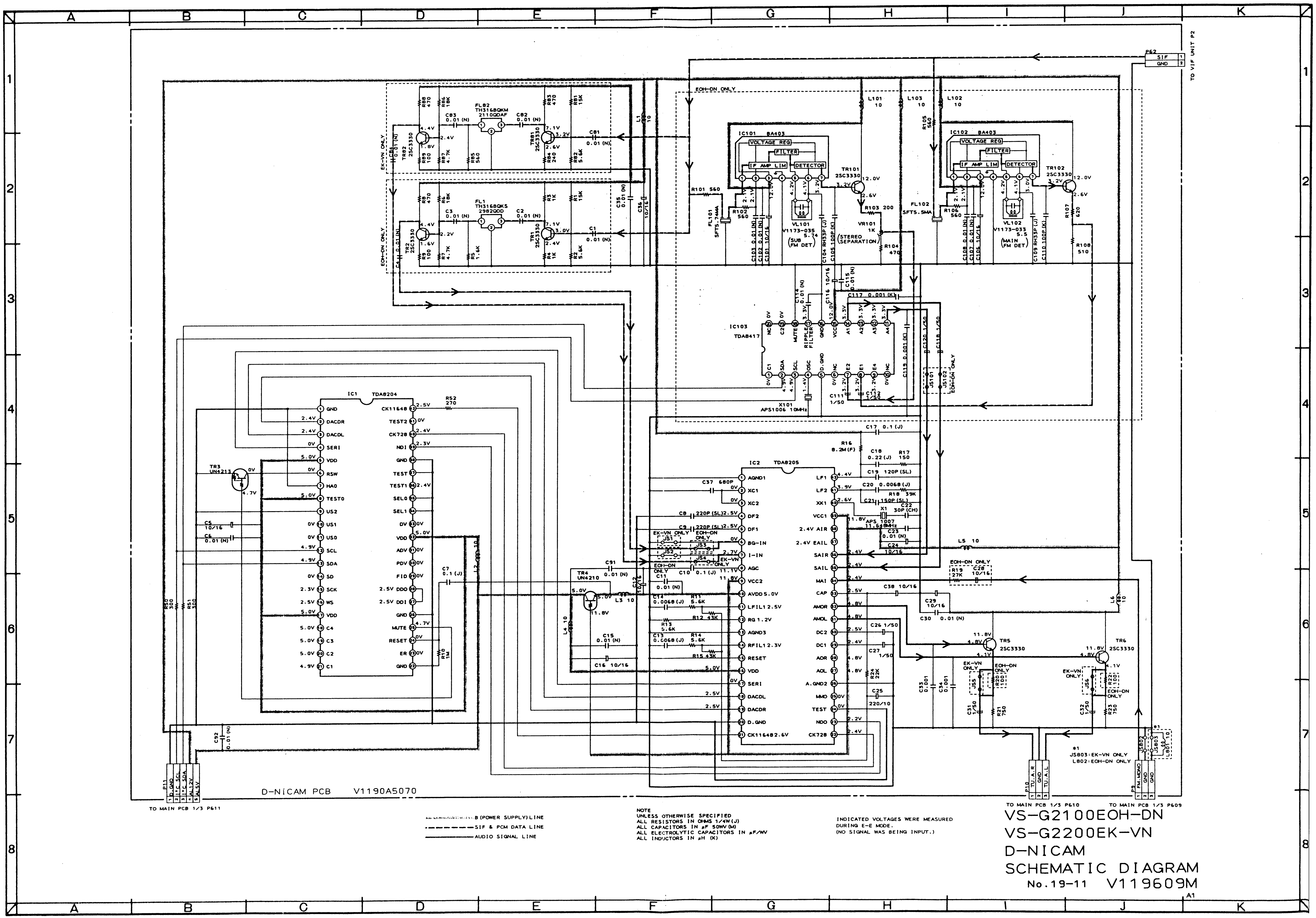
IN/OUT(B) PCB V1190A503B


C
D
V1190A503C

*P306 3P~5P(EA-D ONLY)
2P~7P(EOG-VD ONLY)
1P~7P(EXCEPT EA-D, EOG-VD)

IN/OUT(C) PCB V1190A503C

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.



A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
8
P62
SIF
GND
TO VIF UNIT P2
EOH-DN ONLY
EK-VN ONLY
FL82
TH316BQKM
2110QDAF
FL1
TH316BQKS
2982QDD
TR82
2SC3330
TR81
2SC3330
TR2
2SC3330
TR1
2SC3330
IC101 BA403
IC102 BA403
VOLTAGE REG
FILTER
IF AMP LIM
DETECTOR
TR101
2SC3330
TR102
2SC3330
VL101
V1173-035
(SUB FM DET)
VL102
V1173-033
(MAIN FM DET)
VR101
1K
(STEREO SEPARATION)
FL101
SFT5.74MA
FL102
SFT5.5MA
L101 10
L103 10
L102 10
IC103
TDA8417
X101
APS1006 10MHz
IC1 TDA8204
IC2 TDA8205
TR3
UN4213
TR4
UN4210
TR5
2SC3330
TR6
2SC3330
X1
APS 1007
11.648MHz
L5 10
L3 10
L4 10
L6 10
JS101
JS102
EOH-DN ONLY
JS51
JS52
JS53
JS54
JS55
JS56
JS803
*1
JS803:EK-VN ONLY
L802:EOH-DN ONLY
P11
D.GND
I²C SCL
I²C SDA
AL12V
AL5V
TO MAIN PCB 1/3 P611
P10
TU.A.R
GND
TU.A.L
TO MAIN PCB 1/3 P610
P9
FM.MONO
GND
GND
TO MAIN PCB 1/3 P609
D-NICAM PCB V1190A5070

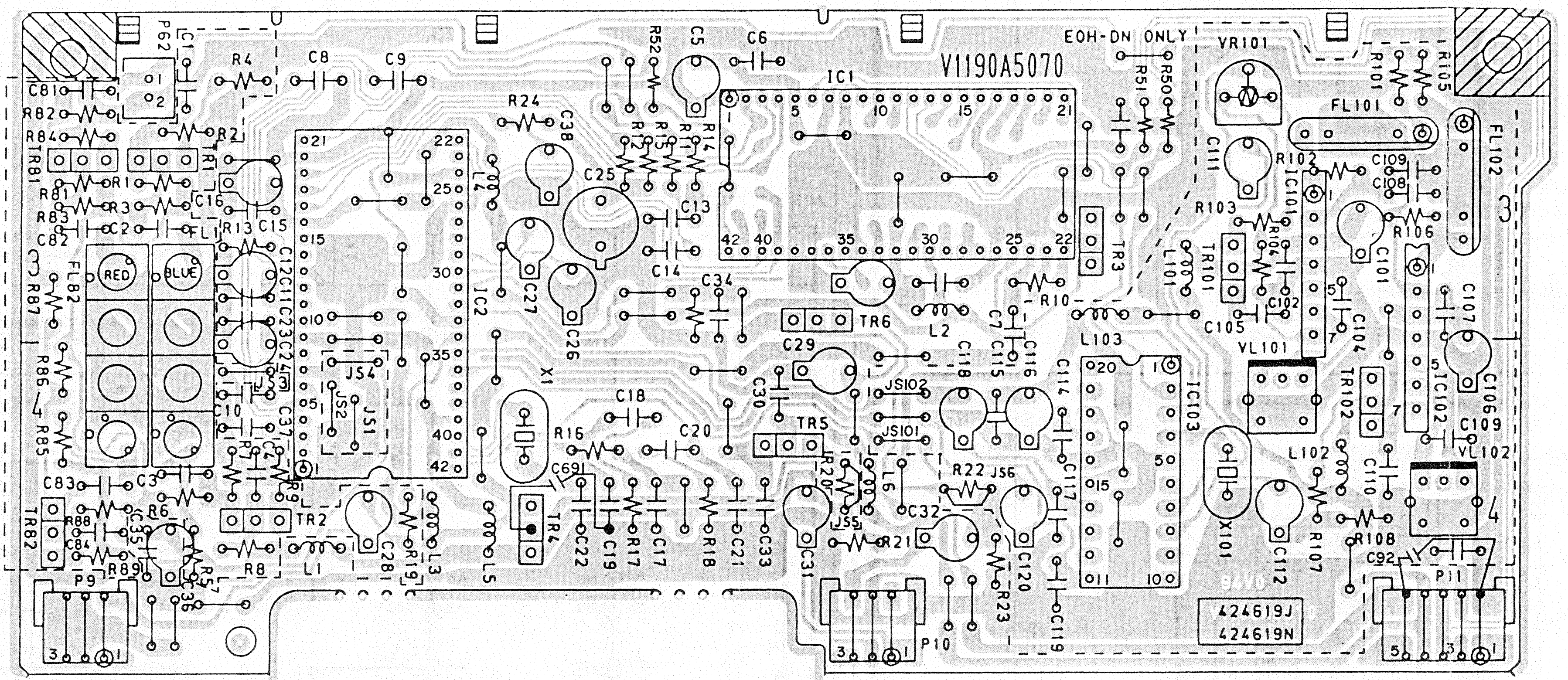
B (POWER SUPPLY) LINE
SIF & PCM DATA LINE
AUDIO SIGNAL LINE

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W (J)
ALL CAPACITORS IN μF 50WV (K)
ALL ELECTROLYTIC CAPACITORS IN μF/WV
ALL INDUCTORS IN μH (K)

INDICATED VOLTAGES WERE MEASURED
DURING E-E MODE.
(NO SIGNAL WAS BEING INPUT.)

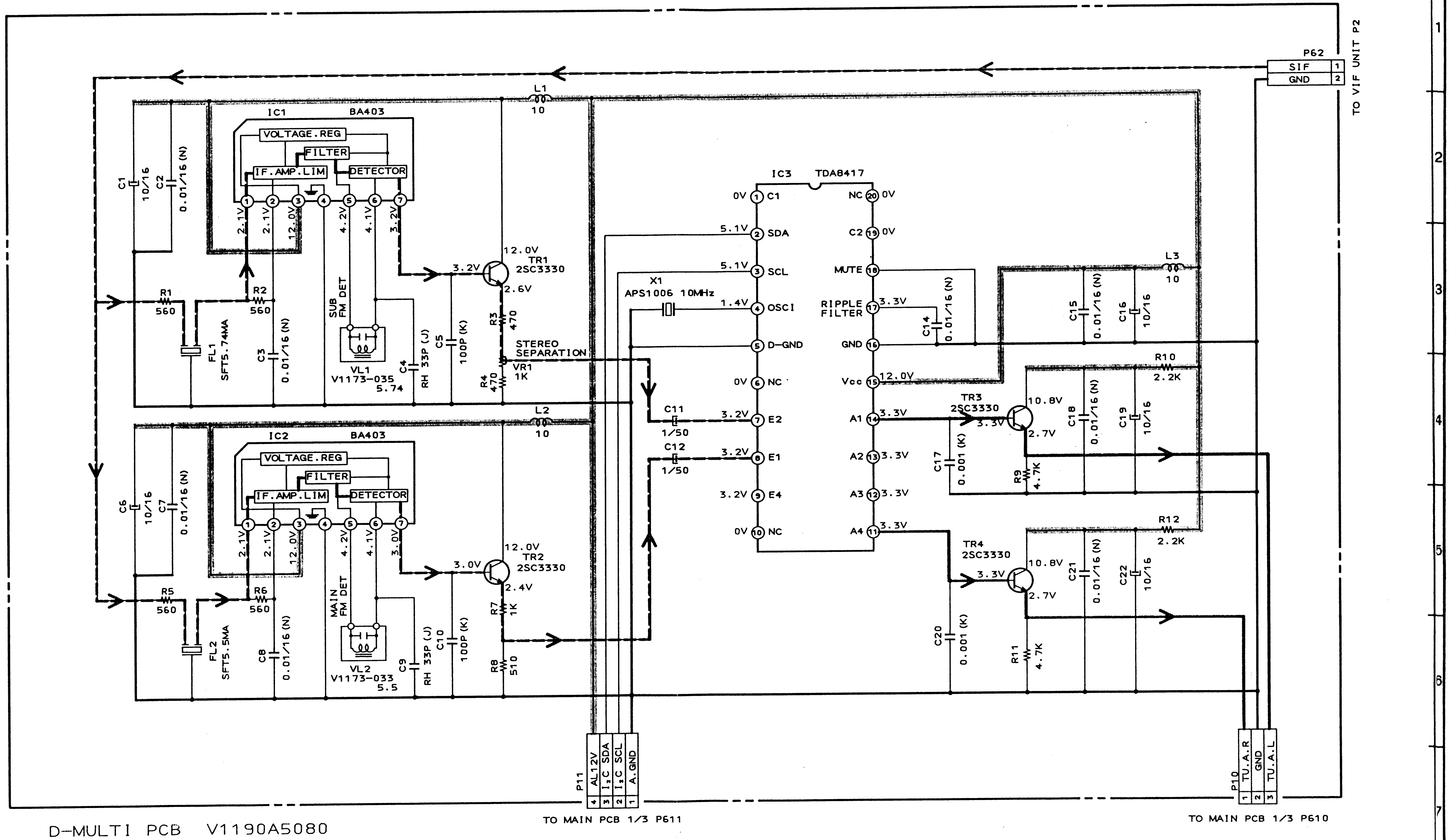
VS-G2100EOH-DN
VS-G2200EK-VN
D-NICAM
SCHEMATIC DIAGRAM
No.19-11 V119609M

A1


V1190A5070
EOH-DN ONLY
IC1
IC2
IC101
IC102
IC103
VR101
FL101
FL102
FL82
RED
BLUE
X1
X101
TR1
TR2
TR3
TR4
TR5
TR6
TR81
TR82
TR101
TR102
L1
L2
L3
L5
L6
L7
L101
L102
L103
VL101
VL102
JS1
JS2
JS3
JS4
JS5
JS6
JS101
JS102
P9
P10
P11
P62
424619J
424619N

D-NICAM PCB V1190A5070

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT
PARTS INFORMATION.



P62
SIF
GND
TO VIF UNIT P2
L1
10
IC1
BA403
VOLTAGE.REG
FILTER
IF.AMP.LIM
DETECTOR
C1
10/16
C2
0.01/16 (N)
2.1V
2.1V
12.0V
4.2V
4.1V
3.2V
12.0V
TR1
2SC3330
3.2V
2.6V
R1
560
R2
560
FL1
SFT5.74MA
C3
0.01/16 (N)
SUB FM DET
VL1
V1173-035
5.74
C4
RH 33P (J)
C5
100P (K)
R3
470
STEREO SEPARATION
VR1
1K
R4
470
L2
10
IC2
BA403
C6
10/16
C7
0.01/16 (N)
2.1V
2.1V
12.0V
4.2V
4.1V
3.0V
12.0V
TR2
2SC3330
3.0V
2.4V
R5
560
R6
560
FL2
SFT5.5MA
C8
0.01/16 (N)
MAIN FM DET
VL2
V1173-033
5.5
C9
RH 33P (J)
C10
100P (K)
R7
1K
R8
510
IC3
TDA8417
0V
C1
5.1V
SDA
5.1V
SCL
X1
APS1006 10MHz
1.4V
OSCI
D-GND
0V
NC
C11
1/50
3.2V
E2
C12
1/50
3.2V
E1
3.2V
E4
0V
NC
NC
0V
C2
0V
MUTE
RIPPLE FILTER
3.3V
GND
Vcc
12.0V
A1
3.3V
A2
3.3V
A3
3.3V
A4
3.3V
C14
0.01/16 (N)
L3
10
C15
0.01/16 (N)
C16
10/16
R10
2.2K
TR3
2SC3330
3.3V
10.8V
2.7V
C17
0.001 (K)
C18
0.01/16 (N)
C19
10/16
R9
4.7K
R12
2.2K
TR4
2SC3330
3.3V
10.8V
2.7V
C20
0.001 (K)
C21
0.01/16 (N)
C22
10/16
R11
4.7K
P11
AL12V
I2C SDA
I2C SCL
A.GND
4
3
2
1
TO MAIN PCB 1/3 P611
P10
TU.A.R
GND
TU.A.L
1
2
3
TO MAIN PCB 1/3 P610

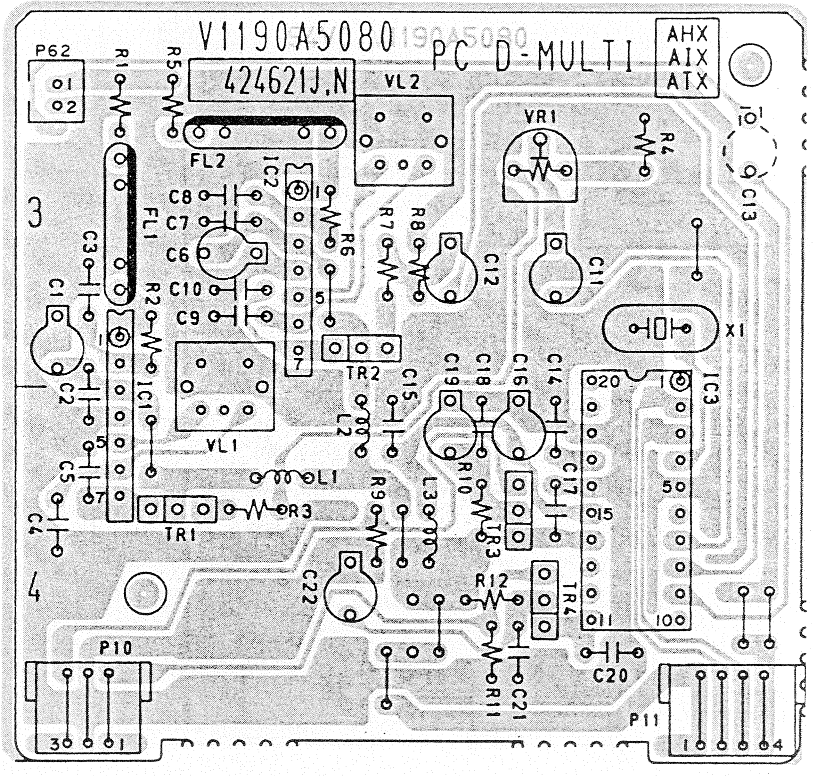
D-MULTI PCB V1190A5080

▨ B (POWER SUPPLY) LINE
- - - - IF OR DETECTED SIGNAL LINE
—— AUDIO OUT SIGNAL LINE

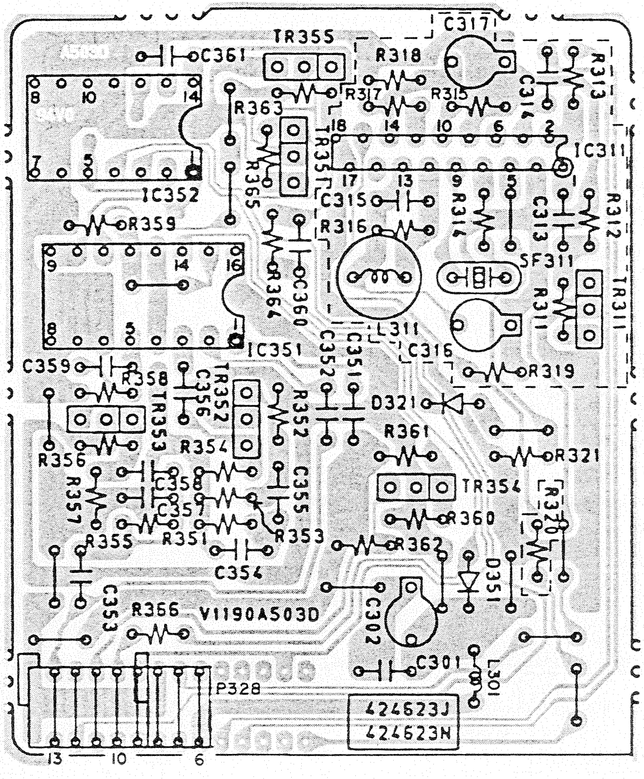
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W (J)
ALL CAPACITORS IN μF 50WV (M)
ALL ELECTROLYTIC CAPACITORS IN μF/WV
ALL INDUCTORS IN μH (K)

INDICATED VOLTAGES WERE MEASURED
DURING E-E MODE.
(NO SIGNAL WAS BEING INPUT.)

VS-G2100EA-D/EO-D
VS-G2160EOH-VD
VS-G2200EOG-VD
D-MULTI
SCHEMATIC DIAGRAM
No.19-12 V119011M
A2

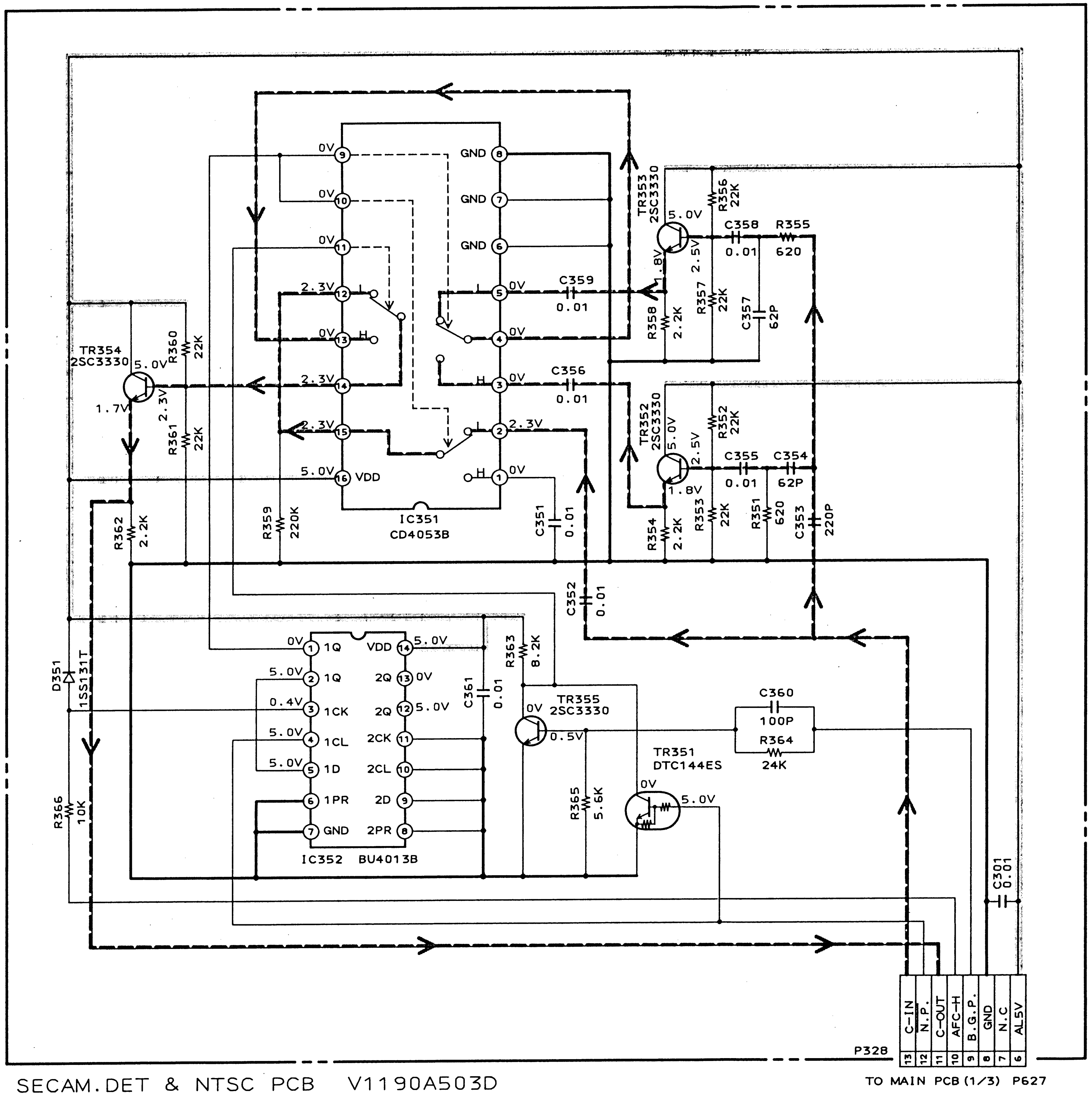

V1190A5080
PC D-MULTI
AHX
AIX
ATX
424621J.N
P62
VL2
VR1
FL2
FL1
IC2
IC1
IC3
VL1
TR1
TR2
TR3
TR4
X1
P10
P11
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
C11
C12
C13
C14
C15
C16
C17
C18
C19
C20
C21
C22
L1
L2
L3
3
4

D-MULTI PCB V1190A5080


TR355
C317
C361
R318
R313
R317
R315
C314
R363
TR351
R365
IC311
IC352
C315
R314
C313
R312
R359
R316
SF311
R364
C360
R311
TR311
L311
IC351
C352
C351
C316
C359
R358
C356
TR352
TR353
R352
D321
R319
R361
R356
R354
R321
R357
C358
C355
TR354
C357
R360
R353
R320
R355
R351
R362
C354
D351
C353
R366
V1190A503D
C302
C301
L301
P328
424623J
424623N

SECAM.DET & NTSC PCB V1190A503D

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT
PARTS INFORMATION.


IC351
CD4053B
IC352 BU4013B
TR351
DTC144ES
TR352
2SC3330
TR353
2SC3330
TR354
2SC3330
TR355
2SC3330
D351
1SS131T
R351 620
R352 22K
R353 22K
R354 2.2K
R355 620
R356 22K
R357 22K
R358 2.2K
R359 220K
R360 22K
R361 22K
R362 2.2K
R363 8.2K
R364 24K
R365 5.6K
R366 10K
C301 0.01
C351 0.01
C352 0.01
C353 220P
C354 62P
C355 0.01
C356 0.01
C357 62P
C358 0.01
C359 0.01
C360 100P
C361 0.01
GND
VDD
1Q
1CK
1CL
1D
1PR
2Q
2CK
2CL
2D
2PR
5.0V
2.3V
2.5V
1.8V
1.7V
0.4V
0.5V
0V
P328
C-IN
N.P.
C-OUT
AFC-H
B.G.P.
GND
N.C
AL5V
13
12
11
10
9
8
7
6
TO MAIN PCB (1/3) P627

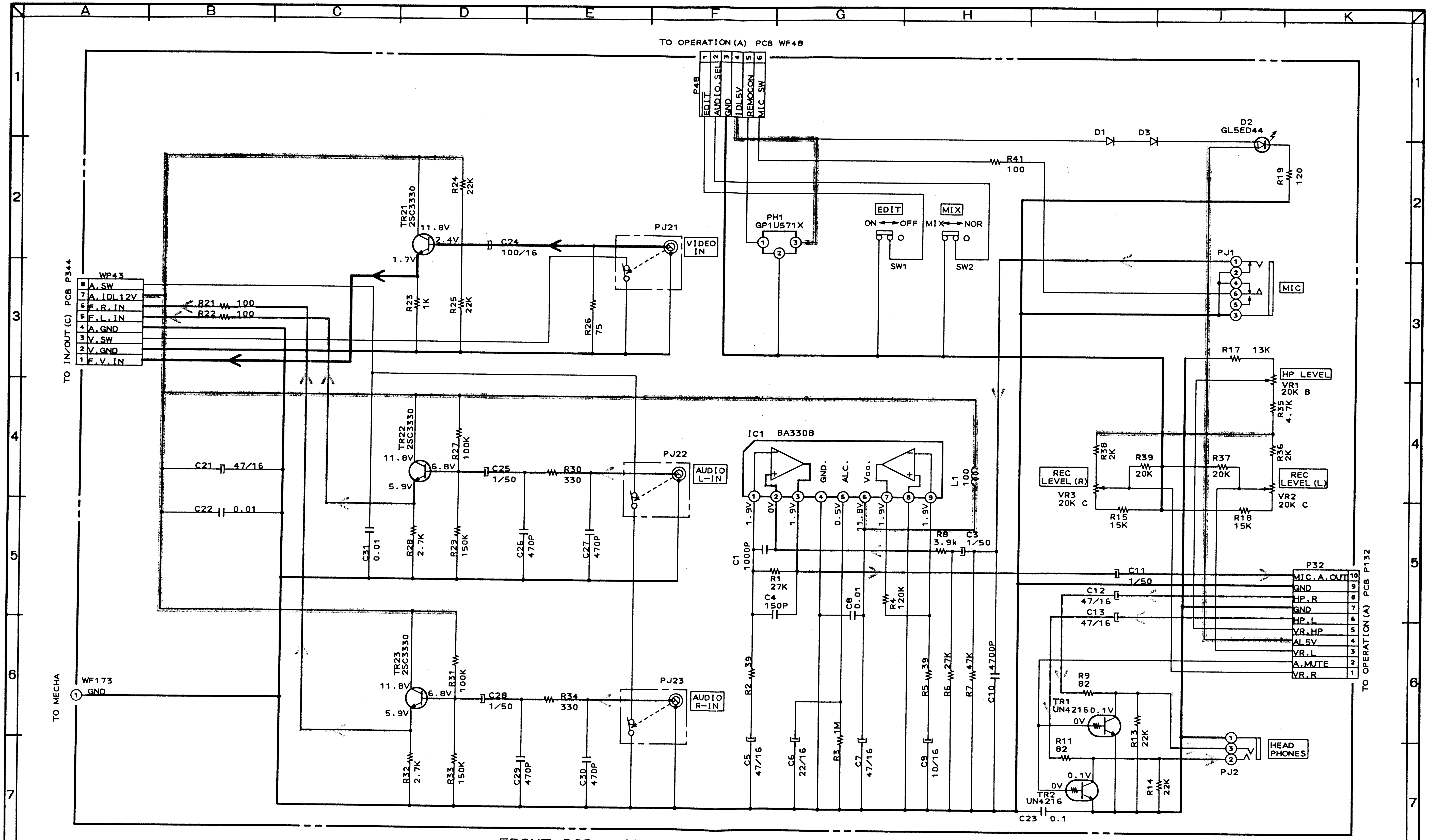
SECAM.DET & NTSC PCB V1190A503D

▨ B (POWER SUPPLY) LINE
- - - - PB CHROMA SIGNAL LINE

NOTE;
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN µF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN µF/WV
ALL INDUCTORS IN µH (K)

INDICATED VOLTAGES WERE
MEASURED DURING PB MODE.
(NTSC 4.43 MODE)

VS-G2100EA-D
VS-G2200EK-VN/EOG-VD
NTSC
SCHEMATIC DIAGRAM
No.19-13 V119409M
A3


TO OPERATION (A) PCB WF48
P48
EDIT
AUDIO.SEL
GND
IDL5V
REMOCON
MIC SW
D1
D3
D2
GL5ED44
R41 100
R19 120
TR21 2SC3330
11.8V
2.4V
1.7V
R24 22K
C24 100/16
PJ21
VIDEO IN
PH1 GP1U571X
EDIT
ON OFF
MIX
MIX NOR
SW1
SW2
PJ1
MIC
TO IN/OUT (C) PCB P344
WP43
A.SW
A.IDL12V
F.R.IN
F.L.IN
A.GND
V.SW
V.GND
F.V.IN
R21 100
R22 100
R23 1K
R25 22K
R26 75
R17 13K
HP LEVEL
VR1 20K B
R35 4.7K
TR22 2SC3330
11.8V
6.8V
5.9V
R27 100K
IC1 BA3308
PJ22
AUDIO L-IN
C21 47/16
C22 0.01
C25 1/50
R30 330
GND.
ALC.
Vcc.
L1 100
R38 2K
R39 20K
R37 20K
R36 2K
REC LEVEL (R)
REC LEVEL (L)
VR3 20K C
VR2 20K C
R15 15K
R18 15K
C31 0.01
R28 2.7K
R29 150K
C26 470P
C27 470P
1.9V
0V
1.9V
0.5V
11.8V
1.9V
1.9V
R8 3.9k
C3 1/50
C1 1000P
R1 27K
C4 150P
C8 0.01
R4 120K
C11 1/50
P32
MIC.A.OUT
GND
HP.R
GND
HP.L
VR.HP
AL5V
VR.L
A.MUTE
VR.R
TO OPERATION (A) PCB P132
C12 47/16
C13 47/16
TO MECHA
WF173
GND
TR23 2SC3330
11.8V
6.8V
5.9V
R31 100K
C28 1/50
R34 330
PJ23
AUDIO R-IN
R2 39
R5 39
R6 27K
R7 47K
C10 4700P
R9 82
TR1 UN4216
0.1V
0V
R13 22K
R11 82
HEAD PHONES
PJ2
TR2 UN4216
0.1V
0V
R14 22K
C23 0.1
R32 2.7K
R33 150K
C29 470P
C30 470P
C5 47/16
C6 22/16
R3 1M
C7 47/16
C9 10/16

FRONT PCB V1196A502B

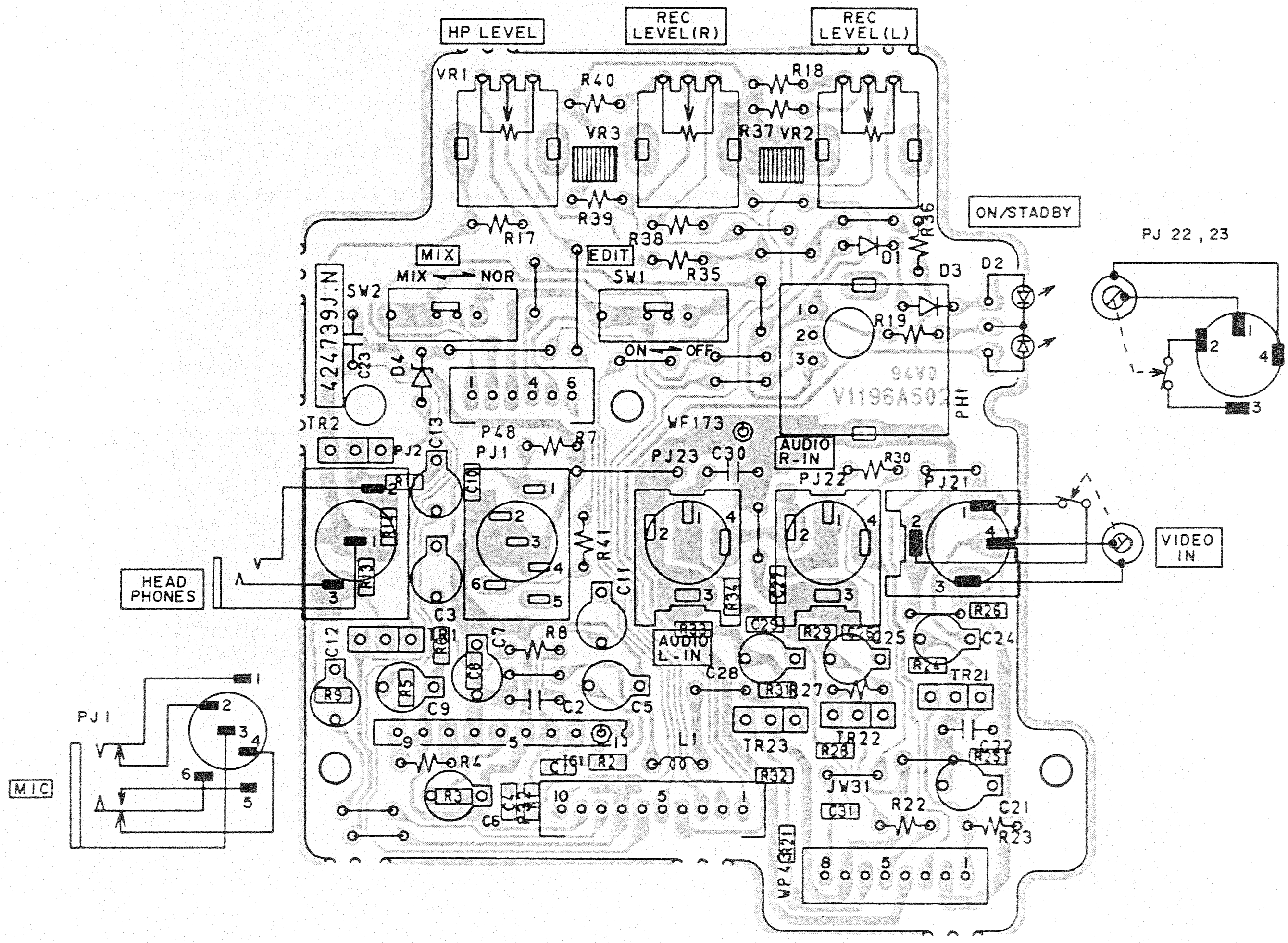
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF
ALL DIODE IS 1SS131T-77

B (POWER SUPPLY) LINE
AUDIO OUT SIGNAL LINE
AUDIO IN SIGNAL LINE
VIDEO IN SIGNAL LINE

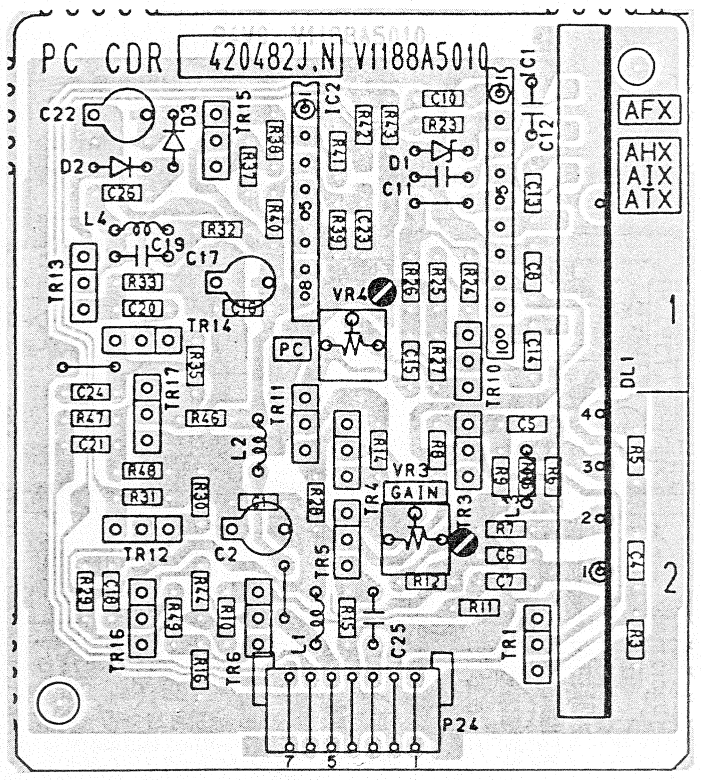
INDICATED VOLTAGES WERE
MEASURED DURING E-E MODE.

VS-G2100EA-D/EO-D/EOH-DN
VS-G2160EOH-VD
VS-G2200EK-VN/EOG-VD
FRONT
SCHEMATIC DIAGRAM

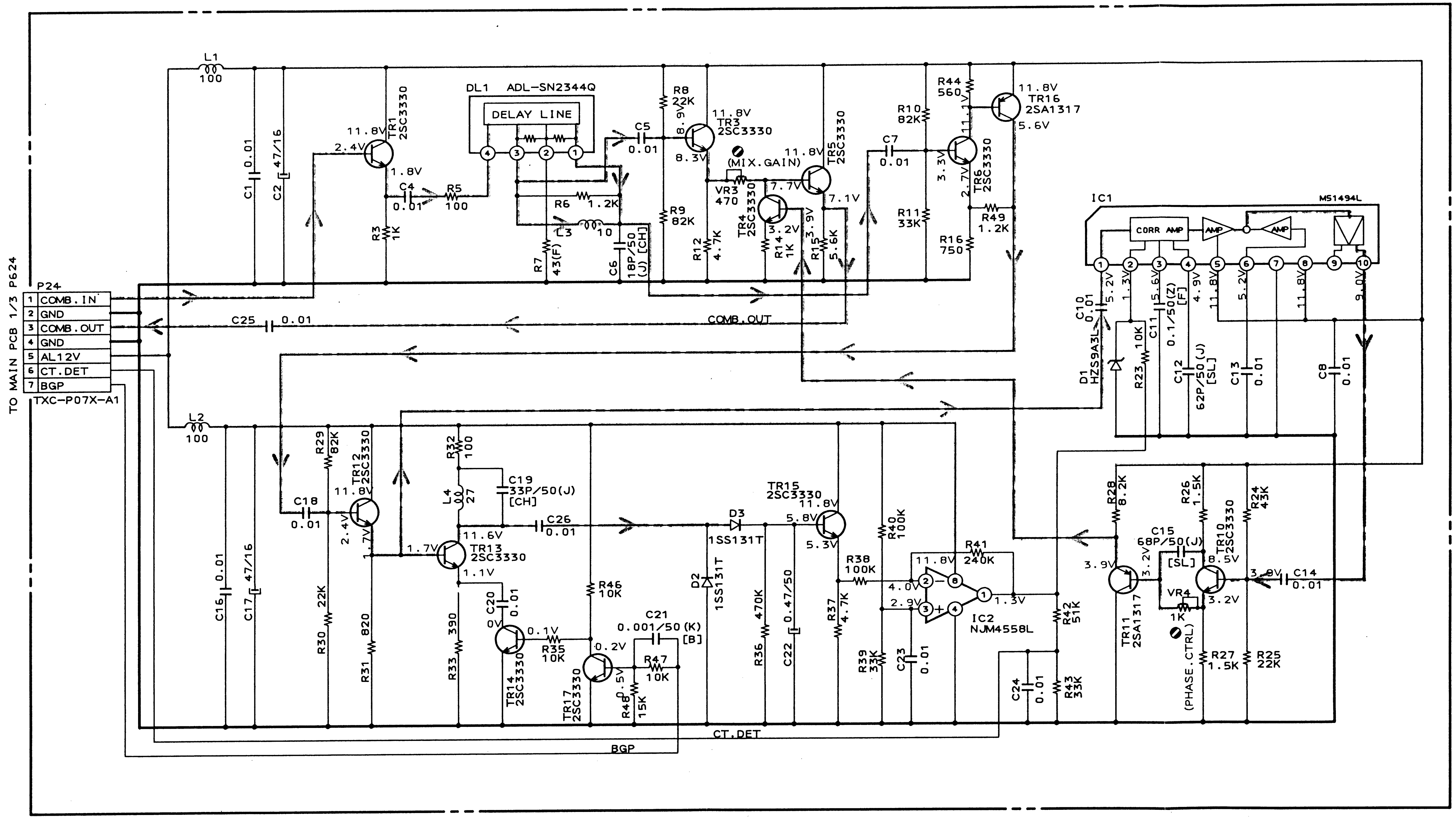
No.19-14 V119610M
A2


HP LEVEL
REC LEVEL(R)
REC LEVEL(L)
VR1
R40
R18
VR3
R37
VR2
R39
R17
R38
R36
ON/STADBY
PJ 22 , 23
MIX
EDIT
MIX ⟵⟶ NOR
SW2
SW1
R35
D1
D2
D3
424739J.N
C23
D4
ON ⟶ OFF
R19
94V0
V1196A502
PH1
TR2
P48
R7
WF173
AUDIO R-IN
PJ2
C13
PJ1
C10
PJ23
C30
PJ22
R30
PJ21
R1
R12
R13
R41
C11
VIDEO IN
HEAD PHONES
C3
R34
R27
R33
AUDIO L-IN
C29
R29
C26
C25
R26
C24
C12
TR1
R6
C7
R8
R24
TR21
C28
R9
R5
C8
C9
C2
C5
R31
R27
PJ1
MIC
L1
TR23
TR22
C22
R28
R25
R4
C1
R2
R32
R3
C4
R11
C6
JW31
C31
R22
C21
R23
WP4
R21
1
2
3
4
5
6
9
10
20
30
8

FRONT PCB V1196A502B


PC CDR
420482J.N
V1188A5010
AFX
AHX
AIX
ATX
C22
D3
TR15
IC2
R38
R37
R41
R42
R43
C10
R23
D1
C11
C1
C12
C13
D2
C26
L4
R32
R40
R39
C23
C19
C17
TR13
R33
C20
C16
TR14
VR4
R26
R25
R24
C8
PC
R35
C15
R27
TR10
C14
1
DL1
C24
TR17
R47
R46
TR11
C21
L2
R14
R8
C5
4
3
R5
R48
R31
R30
R28
TR4
VR3
GAIN
R9
R6
TR3
L3
2
R7
C3
TR12
C2
TR5
C6
C7
C4
R29
C18
R44
R49
R10
R15
R12
R11
TR16
R16
TR6
L1
C25
TR1
R3
P24
7
5
1

CDR PCB V1188A5010


TO MAIN PCB 1/3 P624
P24
1 COMB.IN
2 GND
3 COMB.OUT
4 GND
5 AL12V
6 CT.DET
7 BGP
TXC-P07X-A1
L1 100
L2 100
C1 0.01
C2 47/16
TR1 2SC3330
C4 0.01
R5 100
R3 1K
DL1 ADL-SN2344Q
DELAY LINE
R6 1.2K
L3 10
R7 43(F)
C6 18P/50 (J) [CH]
C5 0.01
R8 22K
R9 82K
TR3 2SC3330
VR3 470 (MIX.GAIN)
TR4 2SC3330
R12 4.7K
R14 1K
R15 5.6K
TR5 2SC3330
C7 0.01
R10 82K
R11 33K
TR6 2SC3330
R16 750
R49 1.2K
R44 560
TR16 2SA1317
IC1 M51494L
CORR AMP
AMP
D1 HZS9A3L
R23 10K
C10 0.01
C11 0.1/50(Z) [F]
C12 62P/50(J) [SL]
C13 0.01
C8 0.01
C25 0.01
COMB.OUT
C16 0.01
C17 47/16
C18 0.01
R29 82K
TR12 2SC3330
R30 22K
R31 820
R32 100
L4 27
C19 33P/50(J) [CH]
TR13 2SC3330
C26 0.01
R33 390
C20 0.01
TR14 2SC3330
R35 10K
R46 10K
TR17 2SC3330
C21 0.001/50(K) [B]
R47 10K
R48 15K
D3 1SS131T
D2 1SS131T
R36 470K
C22 0.47/50
TR15 2SC3330
R38 100K
R37 4.7K
R40 100K
R39 33K
C23 0.01
R41 240K
IC2 NJM4558L
R42 51K
R43 33K
C24 0.01
R28 8.2K
TR11 2SA1317
C15 68P/50(J) [SL]
VR4 1K (PHASE.CTRL)
R26 1.5K
TR10 2SC3330
R27 1.5K
R24 43K
R25 22K
C14 0.01
CT.DET
BGP

CDR PCB V1188A5010

B (POWER SUPPLY) LINE

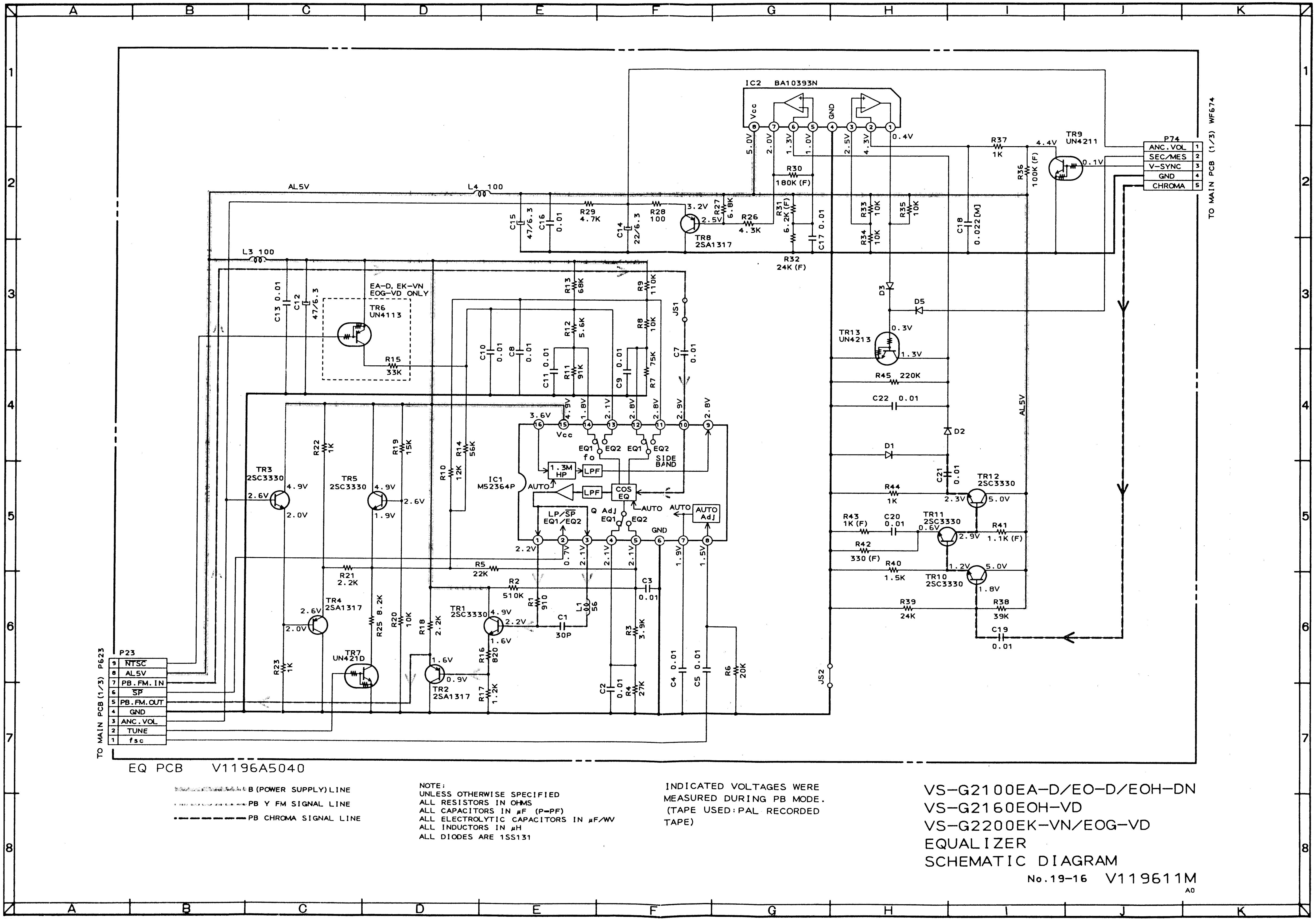
PB CHROMA SIGNAL LINE

CROSSTALK OR NON-CORELATED SIGNAL LINE

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/8W (J)
ALL CAPACITORS IN μF (P=PF) 16WV (N)
ALL ELECTROLYTIC CAPACITORS IN μF/WV (M)
ALL INDUCTORS IN μH (J)

INDICATED VOLTAGES WERE MEASURED DURING PB MODE. (TAPE USED: PAL RECORDED TAPE)

VS-G2100EA-D/EO-D/EOH-DN
VS-G2160EOH-VD
VS-G2200EK-VN/EOG-VD
CDR
SCHEMATIC DIAGRAM
No.19-15 V118410F
A3


A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
8
IC2 BA10393N
Vcc
GND
5.0V
2.0V
1.3V
1.0V
2.5V
4.3V
0.4V
R30 180K (F)
R37 1K
4.4V
TR9 UN4211
0.1V
R36 100K (F)
P74
ANC. VOL 1
SEC/MES 2
V-SYNC 3
GND 4
CHROMA 5
TO MAIN PCB (1/3) WF674
AL5V
L4 100
C15 47/6.3
C16 0.01
R29 4.7K
C14 22/6.3
R28 100
3.2V
2.5V
R27 6.8K
R26 4.3K
TR8 2SA1317
R31 6.2K (F)
C17 0.01
R32 24K (F)
R33 10K
R34 10K
R35 10K
C18 0.022 (M)
L3 100
C13 0.01
C12 47/6.3
EA-D, EK-VN EOG-VD ONLY
TR6 UN4113
R15 33K
R13 68K
R12 5.6K
R11 91K
C11 0.01
C10 0.01
C8 0.01
R9 110K
R8 10K
R7 75K
C9 0.01
JS1
C7 0.01
D3
D5
TR13 UN4213
0.3V
1.3V
R45 220K
C22 0.01
D2
D1
C21 0.01
TR12 2SC3330
2.3V
5.0V
R44 1K
R43 1K (F)
C20 0.01
TR11 2SC3330
0.6V
2.9V
R41 1.1K (F)
R42 330 (F)
R40 1.5K
TR10 2SC3330
1.2V
5.0V
1.8V
R39 24K
R38 39K
C19 0.01
3.6V
4.9V
2.1V
2.8V
2.8V
2.9V
2.8V
Vcc
EQ1 EQ2 EQ1 EQ2
fo
SIDE BAND
1.3M HP
LPF
AUTO
LPF
COS EQ
AUTO
AUTO
AUTO Adj
Q Adj
EQ1 EQ2
LP/SP EQ1/EQ2
GND
IC1 M52364P
2.2V
0.7V
2.1V
2.1V
2.1V
1.9V
1.5V
TR3 2SC3330
4.9V
2.6V
2.0V
R22 1K
TR5 2SC3330
4.9V
2.6V
1.9V
R19 15K
R14 56K
R10 12K
R5 22K
R21 2.2K
R2 510K
R1 910
L1 56
C3 0.01
C1 30P
TR4 2SA1317
2.6V
2.0V
R25 8.2K
R20 10K
R18 2.2K
TR1 2SC3330
4.9V
2.2V
1.6V
R16 820
TR7 UN421D
TR2 2SA1317
1.6V
0.9V
R17 1.2K
R23 1K
R3 3.9K
R4 27K
C2 0.01
C4 0.01
C5 0.01
R6 20K
JS2
P23
9 NTSC
8 AL5V
7 PB. FM. IN
6 SP
5 PB. FM. OUT
4 GND
3 ANC. VOL
2 TUNE
1 fsc
TO MAIN PCB (1/3) P623

EQ PCB V1196A5040

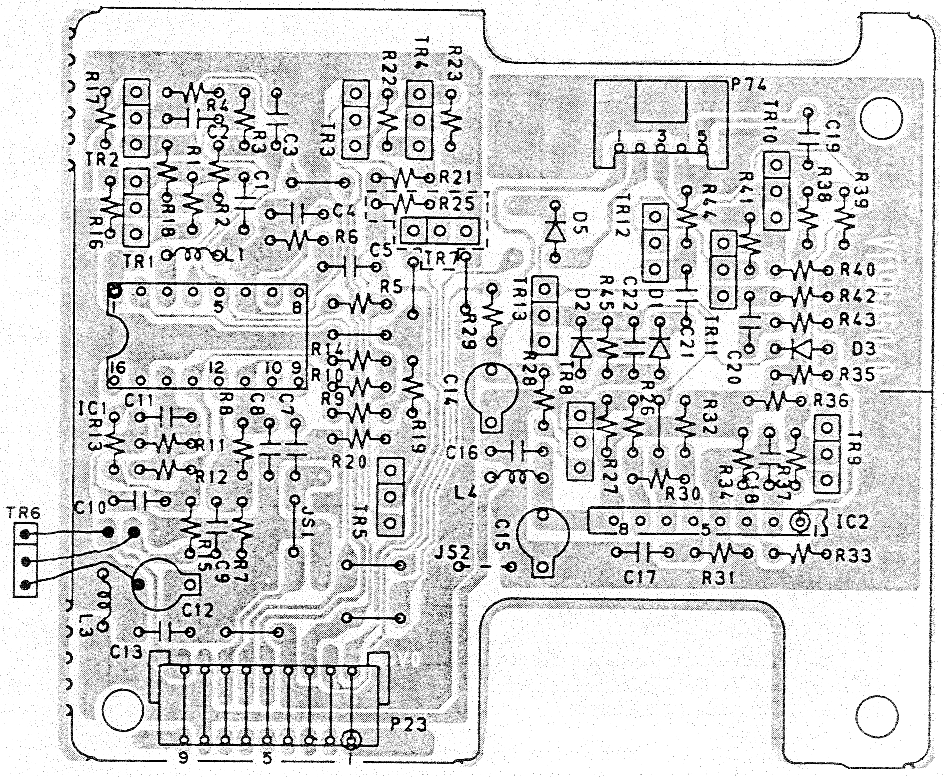
B (POWER SUPPLY) LINE
PB Y FM SIGNAL LINE
PB CHROMA SIGNAL LINE

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV
ALL INDUCTORS IN μH
ALL DIODES ARE 1SS131

INDICATED VOLTAGES WERE MEASURED DURING PB MODE. (TAPE USED: PAL RECORDED TAPE)

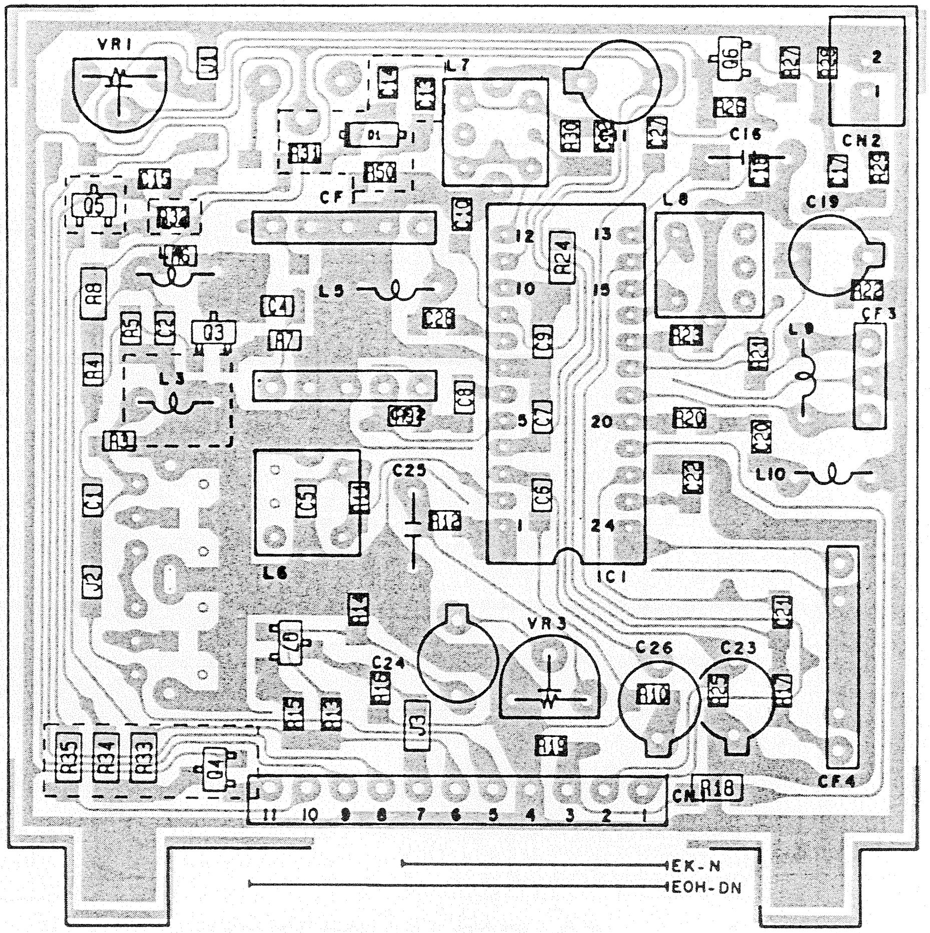
VS-G2100EA-D/EO-D/EOH-DN
VS-G2160EOH-VD
VS-G2200EK-VN/EOG-VD
EQUALIZER
SCHEMATIC DIAGRAM

No.19-16 V119611M
A0


R23
TR4
R22
TR3
R17
TR2
R16
R4
R3
C3
C2
R1
R2
C1
R18
TR1
L1
C4
R6
C5
R21
R25
TR7
R5
P74
TR10
C19
R38
R39
R41
R44
TR12
D5
R40
R42
R43
D3
R35
R36
TR9
TR11
C20
C21
D1
C22
R45
D2
TR13
R29
TR8
R28
R26
R32
R34
C18
R37
R27
R30
IC1
C11
R13
R11
R12
R8
C8
C7
R14
R10
R9
R19
R20
C14
C16
L4
C15
IC2
C17
R31
R33
TR6
C10
R15
C9
R7
JS1
TR5
JS2
C12
L3
C13
P23
1
3
5
8
9
10
12
16

EQ PCB V1196A5040

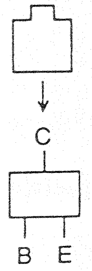
NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.

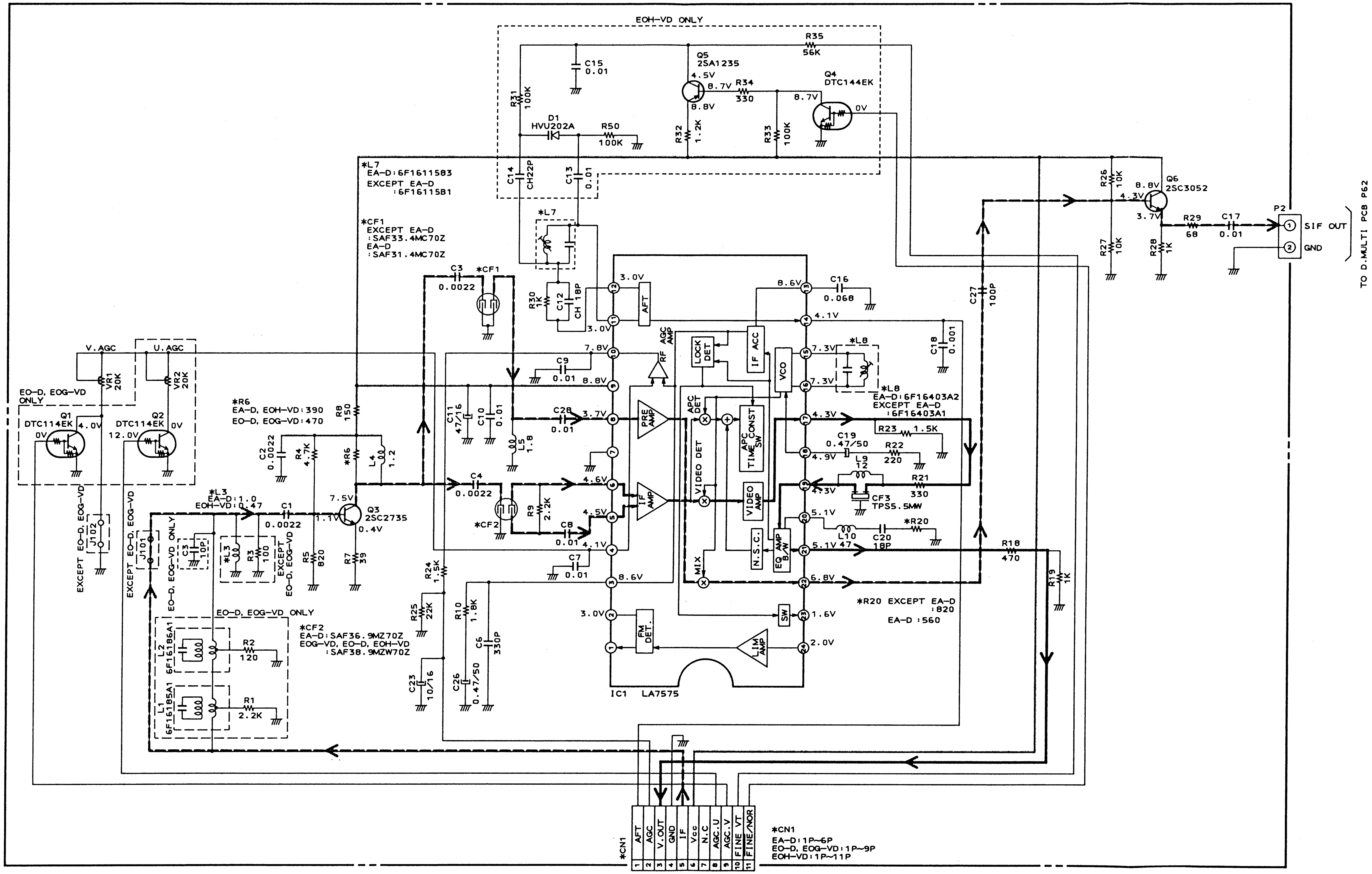

VR1
J1
L7
D1
R31
R50
CF
Q5
R32
R8
R5
C2
Q3
R4
L3
R1
C1
J2
L5
C4
R7
C28
C8
C5
L6
C25
R12
C24
J3
R35
R34
R33
Q4
CN1
11 10 9 8 7 6 5 4 3 2 1
R18
EK-N
EOH-DN
IC1
12
13
10
15
5
20
1
24
R24
C9
C7
C6
C10
R30
C27
Q6
R27
R28
R26
C16
CN2
2
1
C19
L8
R22
CF3
R23
L9
R21
R20
C20
L10
VR3
C26
C23
R10
R25
R17
CF4
R19

VIF UNIT 6B01279A1

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.

SINGLE CHIP TRANSISTOR




EOH-VD ONLY
R35 56K
C15 0.01
Q5 2SA1235
4.5V
8.7V
R34 330
Q4 DTC144EK
8.7V
0V
8.8V
R31 100K
D1 HVU202A
R50 100K
R32 1.2K
R33 100K
*L7 EA-D:6F1611583 EXCEPT EA-D :6F1611581
C14 CH22P
C13 0.01
*L7
*CF1 EXCEPT EA-D :SAF33.4MC70Z EA-D :SAF31.4MC70Z
C3 0.0022
*CF1
R30 1K
C12 CH 18P
3.0V
3.0V
AFT
AGC AMP
RF
8.6V
C16 0.068
4.1V
C18 0.001
C27 100P
R26 10K
Q6 2SC3052
8.8V
4.3V
3.7V
R29 68
C17 0.01
P2
SIF OUT
GND
TO D.MULTI PCB P62
R27 10K
R28 1K
V.AGC
U.AGC
VR1 20K
VR2 20K
EO-D, EOG-VD ONLY
Q1 DTC114EK
4.0V
0V
Q2 DTC114EK
0V
12.0V
*R6 EA-D, EOH-VD:390 EO-D, EOG-VD:470
R8 150
C9 0.01
7.8V
8.8V
C11 47/16
C10 0.01
C28 0.01
3.7V
PRE AMP
LOCK DET
IF ACC
VCO
7.3V
7.3V
*L8
*L8 EA-D:6F16403A2 EXCEPT EA-D :6F16403A1
APC DET
APC TIME CONST SW
VIDEO DET
4.3V
R23 1.5K
C19 0.47/50
R22 220
4.9V
L9 12
4.3V
R21 330
CF3 TPS5.5MW
VIDEO AMP
C2 0.0022
R4 4.7K
*R6
L4 1.2
L5 1.8
C4 0.0022
4.6V
IF AMP
4.5V
*CF2
R9 2.2K
C8 0.01
4.1V
C7 0.01
8.6V
5.1V
L10 47
C20 18P
*R20
5.1V
N.S.C.
EQ AMP B/W
6.8V
MIX
R18 470
R19 1K
*L3 EA-D:1.0 EOH-VD:0.47
C1 0.0022
7.5V
1.1V
Q3 2SC2735
0.4V
J102
EXCEPT EO-D, EOG-VD
J101
EXCEPT EO-D, EOG-VD
EO-D, EOG-VD ONLY
C3 10P
*L3
R3 100
EXCEPT EO-D, EOG-VD
R5 820
R7 39
R24 1.5K
R25 22K
R10 1.8K
C6 330P
3.0V
FM DET.
SW
1.6V
LIM AMP
2.0V
*R20 EXCEPT EA-D :820 EA-D :560
EO-D, EOG-VD ONLY
*CF2 EA-D:SAF36.9MZ70Z EOG-VD, EO-D, EOH-VD :SAF38.9MZW70Z
L2 6F16186A1
R2 120
L1 6F16185A1
R1 2.2K
C23 10/16
C26 0.47/50
IC1 LA7575
*CN1
AFT
AGC
V.OUT
GND
IF
Vcc
N.C
AGC.U
AGC.V
FINE VT
FINE/NOR
*CN1 EA-D:1P~6P EO-D, EOG-VD:1P~9P EOH-VD:1P~11P
TO MAIN PCB 2/3

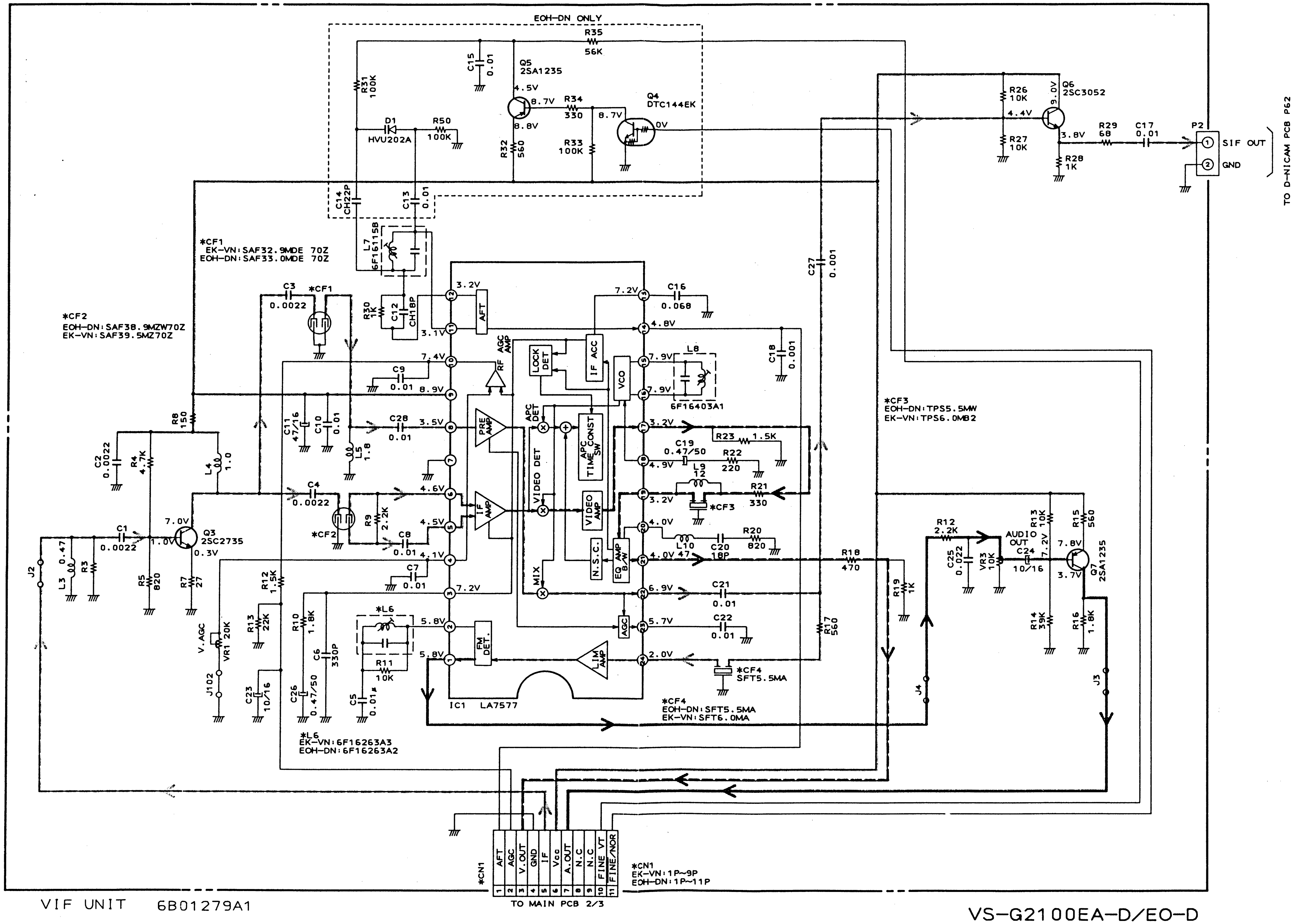
VIF UNIT 6B01279A1

INDICATED VOLTAGES WERE MEASURED
DURING E-E (STOP) MODE.
(WHEN A STATION WAS BEING RECEIVED)

:B (POWER SUPPLY) LINE
:IF SIGNAL LINE
:VIDEO SIGNAL LINE

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN µF
ALL INDUCTORS IN µH
ALL DIODES ARE 1SS131T

VS-G2100EOH-DN
VS-G2200EK-VN
VIF UNIT
SCHEMATIC DIAGRAM
No.19-18 V119613M
A2


EOH-DN ONLY
R35
56K
C15
0.01
Q5
2SA1235
4.5V
8.7V
8.8V
R34
330
8.7V
Q4
DTC144EK
0V
R31
100K
D1
HVU202A
R50
100K
R32
560
R33
100K
C14
CH22P
C13
0.01
L7
6F16115B
*CF1
EK-VN:SAF32.9MDE 70Z
EOH-DN:SAF33.0MDE 70Z
C3
0.0022
*CF1
R30
1K
C12
CH18P
3.2V
3.1V
AFT
*CF2
EOH-DN:SAF38.9MZW70Z
EK-VN:SAF39.5MZ70Z
7.4V
C9
0.01
8.9V
RF AGC AMP
C28
0.01
3.5V
PRE AMP
C11
47/16
C10
0.01
L5
1.8
R8
150
C2
0.0022
R4
4.7K
L4
1.0
C4
0.0022
4.6V
IF AMP
*CF2
R9
2.2K
4.5V
C8
0.01
4.1V
C7
0.01
7.2V
C1
0.0022
7.0V
1.0V
Q3
2SC2735
0.3V
J2
L3
0.47
R3
R5
820
R7
27
V.AGC
VR1 20K
J102
R12
1.5K
R13
22K
C23
10/16
R10
1.8K
C26
0.47/50
C6
330P
*L6
5.8V
5.8V
R11
10K
C5
0.01
FM DET.
IC1 LA7577
*L6
EK-VN:6F16263A3
EOH-DN:6F16263A2
LOCK DET
IF ACC
VCO
APC DET
APC TIME CONST SW
VIDEO DET
VIDEO AMP
N.S.C.
EQ AMP B.W
MIX
AGC
LIM AMP
7.2V
C16
0.068
4.8V
7.9V
7.9V
L8
6F16403A1
C18
0.001
C27
0.001
3.2V
R23
1.5K
C19
0.47/50
R22
220
4.9V
L9
12
3.2V
R21
330
*CF3
4.0V
L10
47
C20
18P
R20
820
4.0V
R18
470
6.9V
C21
0.01
5.7V
C22
0.01
2.0V
*CF4
SFT5.5MA
R17
560
*CF4
EOH-DN:SFT5.5MA
EK-VN:SFT6.0MA
*CF3
EOH-DN:TPS5.5MW
EK-VN:TPS6.0MB2
R26
10K
9.0V
Q6
2SC3052
4.4V
R27
10K
3.8V
R28
1K
R29
68
C17
0.01
P2
① SIF OUT
② GND
TO D-NICAM PCB P62
R12
2.2K
AUDIO OUT
R13
10K
7.2V
R15
560
7.8V
C25
0.022
VR3
10K
C24
10/16
Q7
2SA1235
3.7V
R19
1K
R14
39K
R16
1.8K
J4
J3
*CN1
AFT
AGC
V.OUT
GND
IF
Vcc
A.OUT
N.C
N.C
FINE VT
FINE/NOR
*CN1
EK-VN:1P~9P
EOH-DN:1P~11P
TO MAIN PCB 2/3

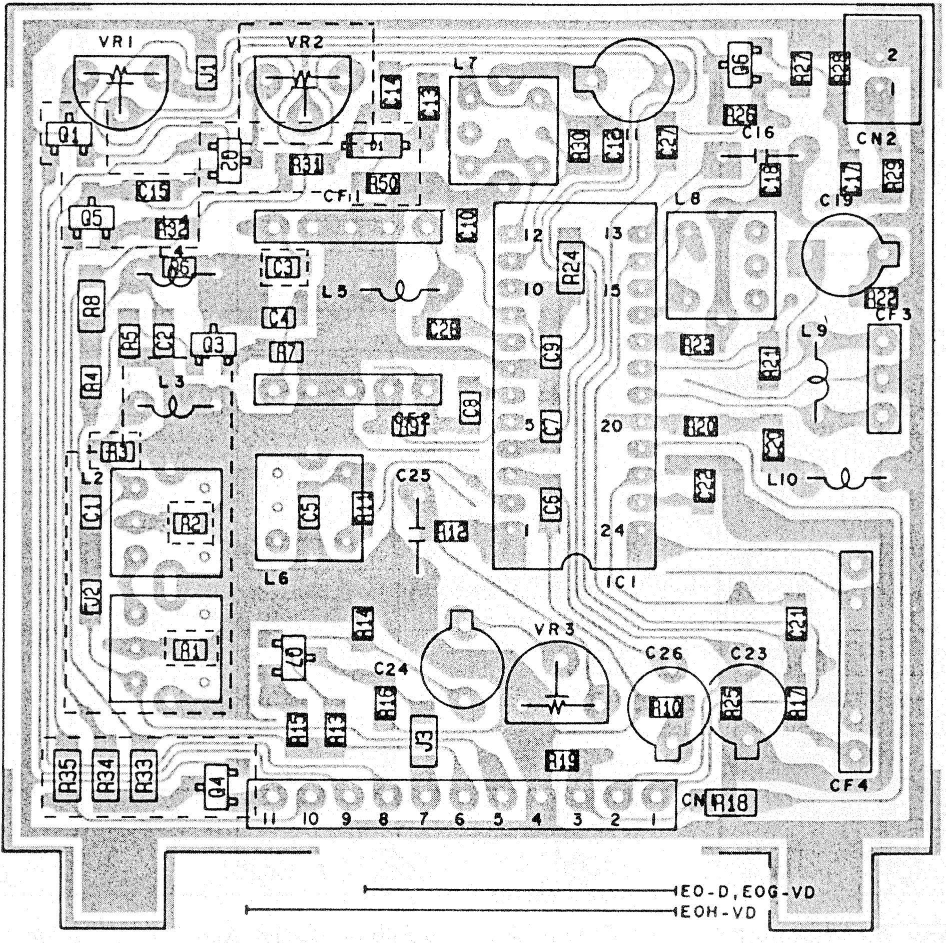
VIF UNIT 6B01279A1

INDICATED VOLTAGES WERE MEASURED
DURING E-E (STOP) MODE.
(WHEN A STATION WAS BEING RECEIVED)

············	:B (POWER SUPPLY) LINE
············	:IF SIGNAL LINE
———	:AUDIO SIGNAL LINE
– – – –	:VIDEO SIGNAL LINE

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF
ALL INDUCTORS IN μH

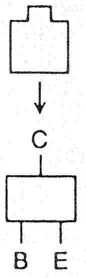
VS-G2100EA-D/EO-D
VS-G2160EOH-VD
VS-G2200EOG-VD
VIF UNIT
SCHEMATIC DIAGRAM
No.19-17 V119612M
A2

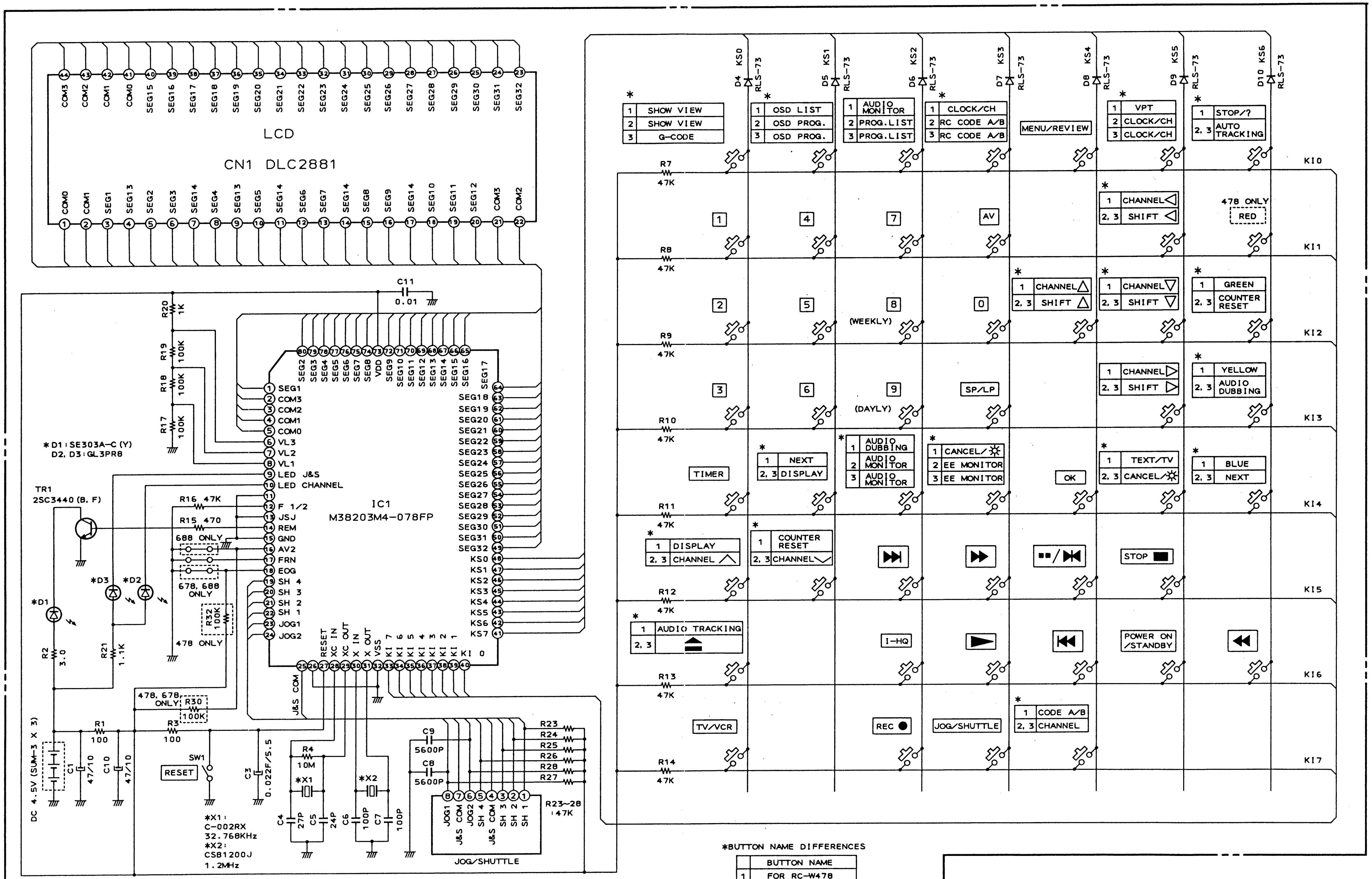

VR1
VR2
J1
L7
Q6
R27
R28
2
1
CN2
Q1
C14
C13
R30
C12
R27
R26
C16
Q2
D1
R31
R50
C18
C17
R29
C15
CF1
C19
Q5
R32
C10
12
13
L8
R24
L4
R6
C3
L5
10
15
R22
CF3
R8
C28
C9
R23
R5
C2
Q3
R7
R21
L9
R4
L3
C8
5
C7
20
R20
R9
CF2
R3
R20
L2
C25
L10
C11
R2
C5
R11
C6
R22
R12
1
24
L6
IC1
J2
R14
VR3
R21
R1
Q7
C24
C26
C23
R16
R10
R25
R17
R15
R13
J3
R19
R35
R34
R33
Q4
CF4
11
10
9
8
7
6
5
4
3
2
1
CN1
R18
EO-D, EOG-VD
EOH-VD

VIF UNIT 6B01279A1

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.

SINGLE CHIP TRANSISTOR




LCD
CN1 DLC2881
COM0 COM1 COM2 COM3
SEG1 – SEG32
IC1
M38203M4-078FP
SEG1 COM3 COM2 COM1 COM0 VL3 VL2 VL1
LED J&S
LED CHANNEL
F 1/2
JSJ
REM
GND
AV2
FRN
EOG
SH 4 SH 3 SH 2 SH 1
JOG1 JOG2
RESET XC IN XC OUT X IN X OUT VSS
KI 7 KI 6 KI 5 KI 4 KI 3 KI 2 KI 1 KI 0
KS0 KS1 KS2 KS3 KS4 KS5 KS6 KS7
VDD
C11 0.01
R20 1K
R19 100K
R18 100K
R17 100K
*D1: SE303A-C (Y)
D2, D3: GL3PR8
TR1
2SC3440 (B, F)
R16 47K
R15 470
688 ONLY
678, 688 ONLY
478 ONLY
R32 100K
*D1
*D2
*D3
R2 3.0
R21 1.1K
478, 678, ONLY
R30 100K
J&S COM
DC 4.5V (SUM-3 X 3)
C1 47/10
C10 47/10
R1 100
R3 100
SW1
RESET
C3 0.022F/5.5
R4 10M
*X1
*X2
C4 27P
C5 24P
C6 100P
C7 100P
*X1: C-002RX 32.768KHz
*X2: CSB1200J 1.2MHz
C9 5600P
C8 5600P
R23 R24 R25 R26 R28 R27
R23~28 :47K
JOG1 J&S COM JOG2 SH 4 J&S COM SH 3 SH 2 SH 1
JOG/SHUTTLE
D4 KS0 RLS-73
D5 KS1 RLS-73
D6 KS2 RLS-73
D7 KS3 RLS-73
D8 KS4 RLS-73
D9 KS5 RLS-73
D10 KS6 RLS-73
R7 47K
R8 47K
R9 47K
R10 47K
R11 47K
R12 47K
R13 47K
R14 47K
KI0 KI1 KI2 KI3 KI4 KI5 KI6 KI7
*
1 SHOW VIEW
2 SHOW VIEW
3 G-CODE
1 OSD LIST
2 OSD PROG.
3 OSD PROG.
1 AUDIO MONITOR
2 PROG.LIST
3 PROG.LIST
1 CLOCK/CH
2 RC CODE A/B
3 RC CODE A/B
MENU/REVIEW
1 VPT
2 CLOCK/CH
3 CLOCK/CH
1 STOP/?
2, 3 AUTO TRACKING
1
4
7
AV
1 CHANNEL◁
2, 3 SHIFT ◁
478 ONLY
RED
2
5
8
(WEEKLY)
0
1 CHANNEL△
2, 3 SHIFT △
1 CHANNEL▽
2, 3 SHIFT ▽
1 GREEN
2, 3 COUNTER RESET
3
6
9
(DAYLY)
SP/LP
1 CHANNEL▷
2, 3 SHIFT ▷
1 YELLOW
2, 3 AUDIO DUBBING
TIMER
1 NEXT
2, 3 DISPLAY
1 AUDIO DUBBING
2 AUDIO MONITOR
3 AUDIO MONITOR
1 CANCEL/☼
2 EE MONITOR
3 EE MONITOR
OK
1 TEXT/TV
2, 3 CANCEL/☼
1 BLUE
2, 3 NEXT
1 DISPLAY
2, 3 CHANNEL
1 COUNTER RESET
2, 3 CHANNEL
STOP
1 AUDIO TRACKING
2, 3
I-HQ
POWER ON /STANDBY
TV/VCR
REC ●
JOG/SHUTTLE
1 CODE A/B
2, 3 CHANNEL

*BUTTON NAME DIFFERENCES

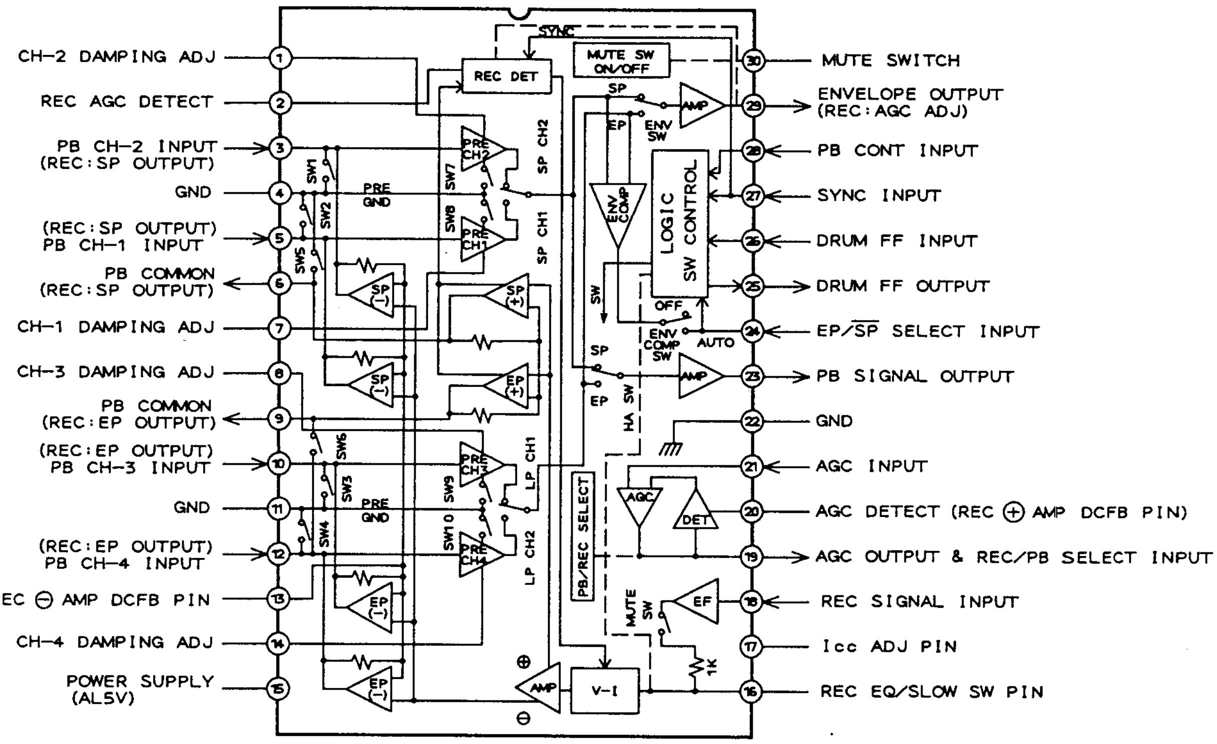
	BUTTON NAME
1	FOR RC-W478
2	FOR RC-W678
3	FOR RC-W688

※ THIS SCHEMATIC DIAGRAM IS ONLY FOR REFERENCE.
TO AVOID REPLACING INDIVIDUAL PARTS, REPLACE
THE ENTIRE UNIT ONLY.

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV

RC-W478E/G, W678E, W688E
REMOTE CONTROL UNIT
SCHEMATIC DIAGRAM
No.19-19 V119614M
A2

AN3386NK-A (4 ch REC/HEAD AMP)


CH-2 DAMPING ADJ ①
REC AGC DETECT ②
PB CH-2 INPUT (REC:SP OUTPUT) ③
GND ④
(REC:SP OUTPUT) PB CH-1 INPUT ⑤
PB COMMON (REC:SP OUTPUT) ⑥
CH-1 DAMPING ADJ ⑦
CH-3 DAMPING ADJ ⑧
PB COMMON (REC:EP OUTPUT) ⑨
(REC:EP OUTPUT) PB CH-3 INPUT ⑩
GND ⑪
(REC:EP OUTPUT) PB CH-4 INPUT ⑫
REC ⊖ AMP DCFB PIN ⑬
CH-4 DAMPING ADJ ⑭
POWER SUPPLY (AL5V) ⑮
㉚ MUTE SWITCH
㉙ ENVELOPE OUTPUT (REC:AGC ADJ)
㉘ PB CONT INPUT
㉗ SYNC INPUT
㉖ DRUM FF INPUT
㉕ DRUM FF OUTPUT
㉔ EP/SP SELECT INPUT
㉓ PB SIGNAL OUTPUT
㉒ GND
㉑ AGC INPUT
⑳ AGC DETECT (REC ⊕ AMP DCFB PIN)
⑲ AGC OUTPUT & REC/PB SELECT INPUT
⑱ REC SIGNAL INPUT
⑰ Icc ADJ PIN
⑯ REC EQ/SLOW SW PIN
SYNC
REC DET
MUTE SW ON/OFF
SP
EP
ENV SW
AMP
PRE CH2
PRE CH1
PRE CH3
PRE CH4
SP CH2
SP CH1
LP CH1
LP CH2
SW1
SW2
SW3
SW4
SW5
SW6
SW7
SW8
SW9
SW10
PRE GND
SP (-)
SP (+)
EP (+)
EP (-)
ENV COMP
LOGIC SW CONTROL
OFF
ENV COMP SW
AUTO
HA SW
PB/REC SELECT
AGC
DET
MUTE SW
EF
1K
V-I
⊕
⊖

LOGIC SW CONDITION

LOGIC INPUT				INTERNAL SWITCH CONDITION							IC OUTPUT	
PB CONT ㉘ PIN	LP/SP SELECT ㉔ PIN	DRUM FF IN ㉖ PIN	SLOW SW ⑯ PIN	SW1 & SW2 SP INPUT SW	SW3 & SW4 LP INPUT SW	HSW1	HSW2	HASW	ENV COMP SWITCH	ENV SW	PRE OUTPUT	DRUM FF OUT ㉕ PIN
HIGH (MANUAL)	HIGH (LP.MANU)	HIGH	OPEN	ON	OFF	CONTROLLED BY DRUM FF IN (㉖ PIN) HIGH:CH-2 LOW:CH-1	CONTROLLED BY DRUM FF IN (㉖ PIN) HIGH:CH-3 LOW:CH-4	LP SIDE	OFF	LP SIDE	CH 3	LOW
		LOW									CH 4	HIGH
	LOW (SP.MANU)	HIGH		OFF	ON			SP SIDE		SP SIDE	CH 2	
		LOW									CH 1	LOW
TYP. (AUTO)	ENV COMP OUTPUT HIGH /LP1	HIGH			OFF			LP SIDE	AUTO	LP SIDE	CH 3	LOW
		LOW									CH 4	HIGH
	ENV COMP OUTPUT LOW /SP1	HIGH						SP SIDE			CH 2	
		LOW									CH 1	LOW
LOW (STILL & SLOW)	HIGH	HIGH						LP SIDE	OFF		CH 3	LOW
		LOW						SP SIDE			CH 1	
	LOW	HIGH									CH 2	HIGH
		LOW						LP SIDE			CH 4	
	HIGH	HIGH	LOW								CH 3	LOW
		LOW									CH 4	HIGH
	LOW	HIGH						SP SIDE			CH 2	
		LOW									CH 1	LOW

* SW5 ~ SW10 : ALWAYS ON WHEN PB MODE

AN3558FBS (Y/C SIGNAL PROCESSOR)

PIN No.	PORT NAME	I/O	FUNCTION
1	MOD IN	I	REC FM modulator input pin.
2	W/C	–	For white clip level adjustment.
3	MDE OUT	O	Main de-emphasis output pin.
4	MDE PEAK	–	For main de-emphasis peaking control.
5	Vcc (Y)	–	Power supply (for modulator & RF system).
6	REC FM OUT	O	REC FM modulator output pin.
7	DEM GAIN	–	De-modulator gain control pin.
8	PB FM IN	I	PB FM Y signal input pin.
9	ENV DET	–	PB FM Y signal envelope level detect pin.
10	DOP OUT	–	Not used.
11	EE/PB/TRICK	–	EE/PB/TRICK select pin (H : EE, M : PB, L : PB TRICK).
12	SP/LP/EP	–	SP/LP/EP select pin (H : EP, M : LP, L : SP).
13	C-KILL DET	–	Colour killer detect pin (L : killer ON).
14	NC CTL	–	Noise canceller (NLC/NC) control pin.
15	SLD	–	Side lock detect pin.
16	REC/PB	–	REC/PB select pin (H : PB-ID off, M : PB-ID on, L : REC).
17	BGP OUT	O	Burst gate pulse output pin.
18	ROT	I	Chroma rotary pulse input pin.
19	MODE SEL	–	LNC mode select pin (L : edit, M : NOR2, H : NOR1).
20	MUTE DET	–	Mute detect pin (L : mute, H : non mute).
21	RAD	–	REC APC detect pin.
22	GND(C)	–	Ground (for VCO).
23	AFC/APC	–	REC AFC/PB APC detect pin.
24	fVCO	–	VCO frequency adjustment pin.
25	fVCO(PAL)	–	Not used.
26	X'TAL(PAL)	–	X'tal connect pin for PAL.
27	X'TAL(N/P)	–	X'tal connect pin for NTSC or PAL. (commom pin)
28	X'TAL(NTSC)	–	Not used.
29	Vcc(C)	–	Power supply for VCO, VXO system.
30	Ref FH DET C	–	Chroma filter auto adjust detect pin.
31	2fsc	O	2fsc output pin.
32	GND(C)	–	Ground for VXO.
33	CACC DET	–	Chroma ACC detect pin.
34	REC C OUT	O	REC chroma signal output pin.
35	FACC DET	–	Field ACC detect pin for CH-2. (OFF when trick mode)
36	ACC DET	–	ACC detect pin.
37	FACC DET	–	Field ACC detect pin for CH-1. (OFF when trick mode)
38	ACC BAL	–	Capacitor connecting pin for ACC balance.
39	3.58/4.43	–	Ground.
40	VCC(C)	–	Power supply (for main chroma).
41	PB RF C IN	I	PB low chroma signal input pin.
42	CNR TEST	I	CNR monitor and on/off pin (ON : 3.4 V, OFF : 3.8 V).
43	GND(C)	–	Ground for chroma system.
44	TEST2	–	Test pin 2.
45	BMC	–	Capacitor connecting pin for BM balance.
46	TEST1	–	Not used.
47	CACC-C	–	Capacitor connecting pin for chroma ACC balance.
48	COMB DRV	O	Driving output for comb filter.
49	C IN TH	I	Chroma signal input pin (direct in).
50	C IN COMB	I	Chroma signal input pin (through the COMB filter).
51	CNR DL	–	Not used.
52	MODE SEL	–	Colour mode select pin (H : MESECAM, M : PAL, L : NTSC).
53	PB C OUT	O	PB chroma signal output pin.
54	Y LPF DET	–	Y LPF fsc detect pin.
55	Y/C MIX	I	PB chroma signal input for Y/C mix.
56	VCC(Y)	–	Power supply for Y signal.
57	V.OUT	O	Composite video signal output pin.
58	AVP	I	Quasi V-sync pulse input pin (H : sync level, M : gray level, L : through).
59	SCL DET	–	Sub clamp detect pin.

AN3558FBS (Y/C SIGNAL PROCESSOR)

PIN No.	PORT NAME	I/O	FUNCTION
60	V.IN	I	Video signal input pin.
61	AGC DET	–	AGC level detect pin.
62	SECAM TH	O	SECAM through output pin.
63	EE ADJ	–	EE video level adjustment pin.
64	HSS OUT	O	H sync separator output pin.
65	SYNC DET	–	Sync separator detect pin.
66	SECAM CLP	I	SECAM clamp input pin.
67	Y LPF OUT	O	Y-LPF output pin.
68	CLP 1 IN	I	Clamp 1 input pin.
69	CLP 2 IN	I	Clamp 2 input pin.
70	CCD IN	O	Output for CCD.
71	YNR DEF	O	YNR diffrential component output pin.
72	CORR DET	I	Correlation detect input pin.
73	GND(Y)	–	Ground for Y signal.
74	CCD AGC DET	–	CCD AGC detect pin.
75	NC LPF	–	LPF pin for Noise Canceller.
76	PICT CTL	–	Picture control pin (L:sharp).
77	NLE/MDE	O	Non linear emphasis / main de-emphasis output pin.
78	CLP 3 IN	I	Clamp 3 input pin.
79	ME FBK	I	Main emphasis feedback input pin.
80	ME OUT	O	Main emphasised signal output pin.

AN3317K (REC/HEAD AMP FOR FM AUDIO)

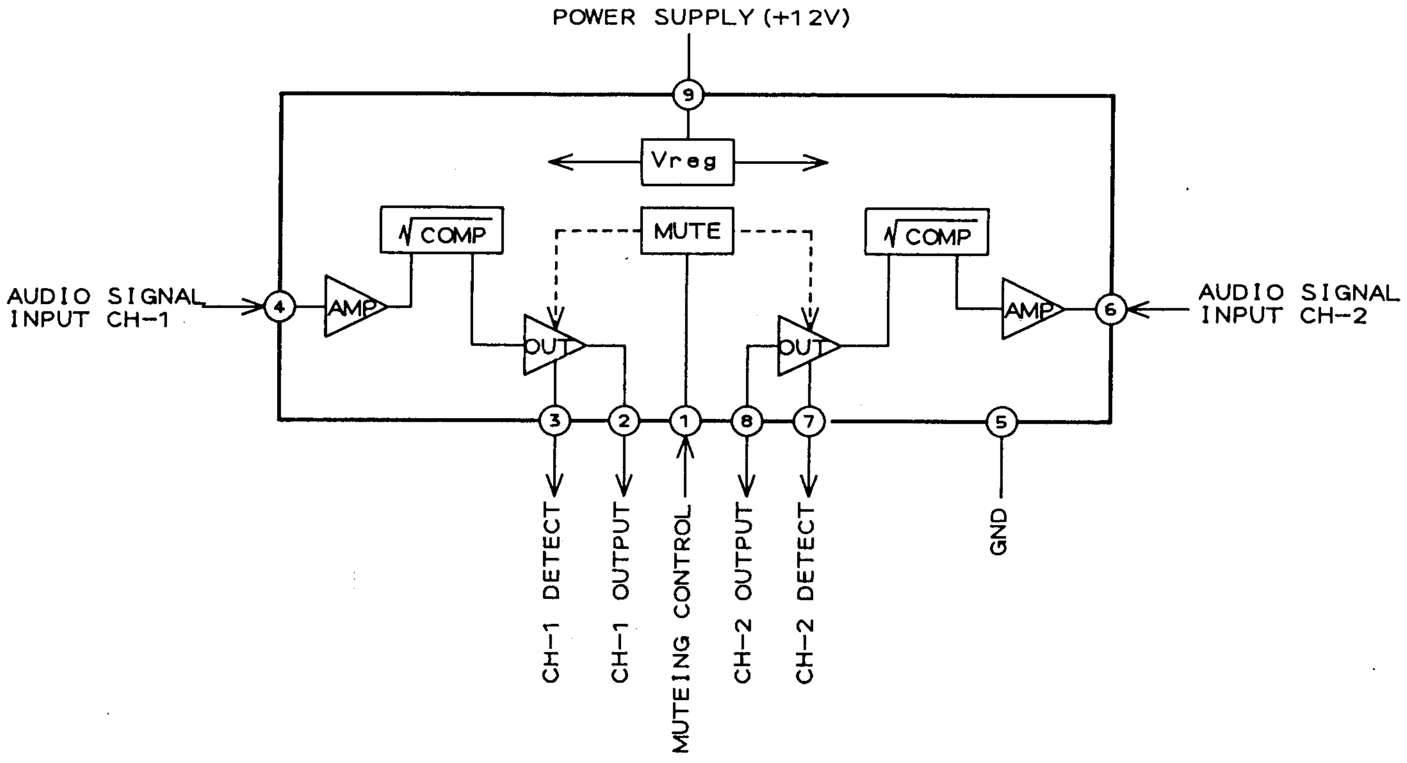
PIN No.	PORT NAME	I/O	FUNCTION
1	H SW SEL	I	CH-1 and CH-2 head amp select switch control. (H : CH-1, L : CH-2)
2	REC/PB SEL	I	REC/PB select pin. (H : REC, L : PB)
3	REC/MUTE SEL	I	REC/MUTE select pin. (H : REC mode, L : mute)
4	CH1 DUB	–	CH-1 head AMP damping control pin.
5	PB CH1 IN	I	CH-1 PB signal input pin.
6	GND1	–	To be grounded.
7	REC OUT	O	REC signal output pin.
8	PB CH2 IN	I	CH-2 PB signal input pin.
9	CH2 DUB	–	CH2 head AMP damping control pin.
10	REC VCC1	O	+4 V power supply for CH-1 head (REC mode).
11	REC VCC2	O	+4 V power supply for CH-2 head (REC mode).
12	MAIN VCC	–	+5 V power supply of this IC.
13	PEAK DET	–	Capacitor connecting pin for Peak AGC detection.
14	AGC DET	–	Capacitor connecting pin for AGC detection.
15	REC CURR	I	Rec current AMP input pin.
16	PB OUT	O	PB signal output pin.
17	GND2	–	To be grounded.
18	REC AGC	O	REC signal out from AGC circuit.
19	REC LPF	–	Capacitor connecting pin for AGC comparator's LPF.
20	CURR EMPH	–	Current emphasis select pin. (H : over REC, L : normal)
21	REC IN	I	REC FM audio signal input pin.
22	AGC LEVEL	–	AGC level control pin.

AN3963NFBPA (Hi-Fi & NORMAL AUDIO SIGNAL PROCESSOR)

PIN No.	PORT NAME	I/O	FUNCTION
1	VCC2	–	+12 V power supply.
2	TV IN	I	L-CH TV sound input pin.
3	AUX IN	I	L-CH AUX input pin.
4	BS2 IN	I	L-CH BS-2 input pin.
5	BS1 IN	I	L-CH BS-1 input pin.
6	REC VOL	I	L-CH REC input level adjust pin.
7	AGC DET	–	Stereo AGC detection pin.
8	NR DET 1	–	L-CH NR detect 1 pin.
9	NR DET 2	–	L-CH NR detect 2 pin.
10	GND 1	–	L-CH ground pin.
11	NR REF	–	L-CH NR reference pin.
12	CCA OUT	O	L-CH CCA output pin
13	VREF 1	–	A half voltage of the VCC1 (16 pin).
14	EMPHA NF	–	L-CH emphasis/de-emphasis select pin.
15	HOLD C	–	L-CH hold capacitor connecting pin.
16	VCC 1	–	L-CH +5 V power supply.
17	f0 ADJ	I	L-CH f0 (1.4 MHz) adjust pin.
18	FM OUT/BPF MON	O	L-CH REC FM output and BPF monitor pin
19	ENV.DET	O	Envelope detect pin
20	CS IN	I	Chip select signal input pin from SYSCON MI-COM.
21	CLOCK IN	I	Clock input pin from SYSCON MI-COM.
22	DATA IN	O	Data input pin from SYSCON MI-COM.
23	FORCE	O	Hi-Fi PB signal detect pin. (Hi-Fi : H, Normal : L)
24	GND	–	Ground for logic circuit.
25	PB FM IN	I	PB FM signal input pin.
26	VCC	–	+5 V power supply for logic circuit.
27	DELAYD FF	I	Delayed FF input pin
28	GND	–	Ground for BPF.
29	HOLD TIME C	–	Hold time setting pin
30	NOISE DET	–	Noise detection pin
31	FM OUT/BPF MON	O	R-CH REC FM output and BPF monitor pin.
32	f0 ADJ	–	R-CH f0 adjust pin.
33	VCC 1	–	R-CH +5 V power supply.
34	HOLD-C	–	R-CH hold capacitor pin.
35	EMPHA NF	–	R-CH emphasis/de-emphasis select pin.
36	MUTE CTL	–	Muting control pin
37	CCA OUT	O	R-CH CCA output pin.
38	NF REF	–	R-CH NR reference pin.
39	GND 1	–	R-CH ground pin.
40	NR DET 2	–	R-CH NR detect pin 2.
41	NR DET 1	–	R-CH NR detect pin 1.
42	NOR AGC DET	–	Linear audio AGC detection pin.
43	REC IN VOL	I	R-CH REC input level adjust pin.
44	BS 1 IN	I	R-CH BS 1 input pin.
45	BS 2 IN	I	R-CH BS 2 input pin.
46	AUX IN	I	R-CH AUX input pin.
47	TV IN	I	R-CH TV input pin.
48	NOR REC IN	I	Linear audio REC input pin.
49	NOR PB IN	I	Linear audio PB signal input pin (fH trapped).
50	NOR PB OUT	O	Linear audio PB output pin (fH trapped).
51	NOR PB EQ SW	–	Linear audio PB EQ select pin.
52	NOR PB NF	–	Linear audio PB AMP NF pin.
53	NOR PB IN	I	Linear audio PB signal input pin (Normal head).
54	NOR REC NF	–	Linear audio REC AMP EQ pin.
55	NOR REC OUT	O	REC OUT pin for Linear audio (Normal head).
56	GND	–	Ground
57	RF CONV OUT	O	Audio out pin for RF converter.
58	LINE OUT	O	R-CH line out pin.
59	H/P OUT	O	R-CH out for headphone.
60	GND2	–	Ground
61	H/P OUT	O	L-CH out for headphone.
62	LINE OUT	O	L-CH line out pin.
63	VREF 2	–	A half voltage of the VCC2 (1 pin).
64	H/P OUT VOL	–	Headphone AMP level control pin.

NOTE: NR : noise reduction CCA : current controlled amp

BA6138 (LEVEL METER DRIVE)



CF72306 (TELETEXT DATA SLICER)

PIN No.	PORT NAME	I/O	FUNCTION
1	TSIG	I	Video sync input 1
2	SSIG	I	Video sync input 2
3	CSIG	I	Video data input
4	AGND1	–	Analogue ground
5	OSC1	I	13.875 MHz oscillator
6	OSC2	I	13.875 MHz oscillator
7	AVCC	–	Analogue Vcc
8	CREF	I	Video data reference input
9	AGND2	–	Analogue ground
10	BIAS	I	Internal reference
11	TSTAPLB	I	Test/Application
12	TCLK	O	Teletext clock
13	TDATA	O	Teletext data
14	DGND2	–	Digital ground
15	OSCOUT	O	Oscillator output
16	DVCC	–	Digital Vcc
17	WIND	I	Timing signal
18	DGND1	–	Digital ground
19	SYNC	O	Separated sync output
20	SCANOUT	O	Test scan output

CF72307 (TELETEXT DECODER)

PIN No.	PORT NAME	I/O	FUNCTION
1	FIELD	O	Programmable output polarity of a 25 Hz output signal synchronized either with CSYNC or SLVHVSYNC input field sync pulses to produce a non-interlaced display.
2	DCSYNC	O	Digital composite sync output.
3	CSYNCIN	I	Active low composite sync.
4	TACW	I	Teletext aquisition window.
5	TUM	I	Test pin. (Must be grounded in normal application.)
6	OSCOUT	O	13.875 MHz crystal oscillator output.
7	OSCIN	I	13.875 MHz crystal oscillator input. (OSCIN must be grounded if the 13.875 MHz clock of the dataslicer is connected to CLKIN.)
8	DVCC1	I	Power supply for digital logic. (5 V ± 5 %)
9	CLKIN	I	13.875 MHz system clock input for digital logic.
10	DGND2	–	Ground terminal for digital logic.
11	TDATA	I	Teletext data from dataslicer.
12	TCLOCK	I	Teletext clock from dataslicer.
13	DGND1	–	Ground terminal for digital logic.
14	AVCC1	I	Power supply for analogue logic. (5 V ± 5 %)
15	BLANK	O	Picture blanking signal (active high).
16	BLUE	O	Blue output (active high).
17	AGND1	–	Ground terminal for analogue logic.
18	GREEN	O	Green output (active high).
19	AGND2	–	Ground terminal for analogue logic.
20	RED	O	Red output (active high).
21	AGND3	–	Ground terminal for analogue logic.
22	RGBSET	I/O	A current, determind by a resistor defines the output high level on the RGB pins.
23	REF	I/O	Reference voltage output for the RGB output drivers.
24	AVCC2	I	Power supply for analogue logic. (5 V ± 5 %)
25	VIDEOIN	I	Composite video signal input.
26	ACSYNC	O	Analogue output of sync switch.
27	TEST	I	Test pin. (Must be grounded in normal application.)
28	BIAS	I	Bias definition pin. (BIAS should be grounded if the on chip oscillator is not used.)
29	$\overline{\text{RESET}}$	I	Power on reset signal input (active low).
30	TRC	I	Test pin. (Must be grounded in normal application.)
31	TGST		
32	TGMT		
33	SLVHSYNC	I	Programmable active low or high H-sync input. (In slave sync mode, it locks the horizontal display timing to this signal.)
34	SLVHVSYNC	I	Programmable active low or high V-sync input. (In slave sync mode, it locks the vertical display timing to this signal.)
35	PWRDWN	I	Power down the IC in test mode.(Should be grounded in normal application.)
36	SDA	I/O	I^2C-bus serial data.
37	SCL	I/O	I^2C-bus serial data clock.
38	C1	I	Test pin. (Must be connected to +5 V in normal application.)
39	CO	I	
50	A0	O	DRAM row and column address.
46	A1		
43	A2		
41	A3		
40	A4		
42	A5		
45	A6		
48	A7		
51	A8		
54	A9		
44	DVCC2	I	Power supply for digital logic. (5 V ± 5 %)
47	DGND3	–	Ground terminal for digital logic.
49	DGND4	–	
52	VDD32	O	Output terminal of the 3.2 V power supply.
53	DVCC3	I	Power supply for digital logic. (5 V ± 5 %)
55	$\overline{\text{G}}$	O	DRAM output (active low).
56	$\overline{\text{RAS0}}$	O	DRAM row address strobe output.
57	$\overline{\text{CAS0}}$	O	DRAM column address strobe output.
58	$\overline{\text{W}}$	O	DRAM write command (active low).
62	D0	I/O	DRAM data.
60	D1		
59	D2		
61	D3		
63	$\overline{\text{RAS1}}$	O	DRAM row address strobe for memory bank zero.
64	$\overline{\text{CAS1}}$	O	DRAM column address strobe for memory bank one.

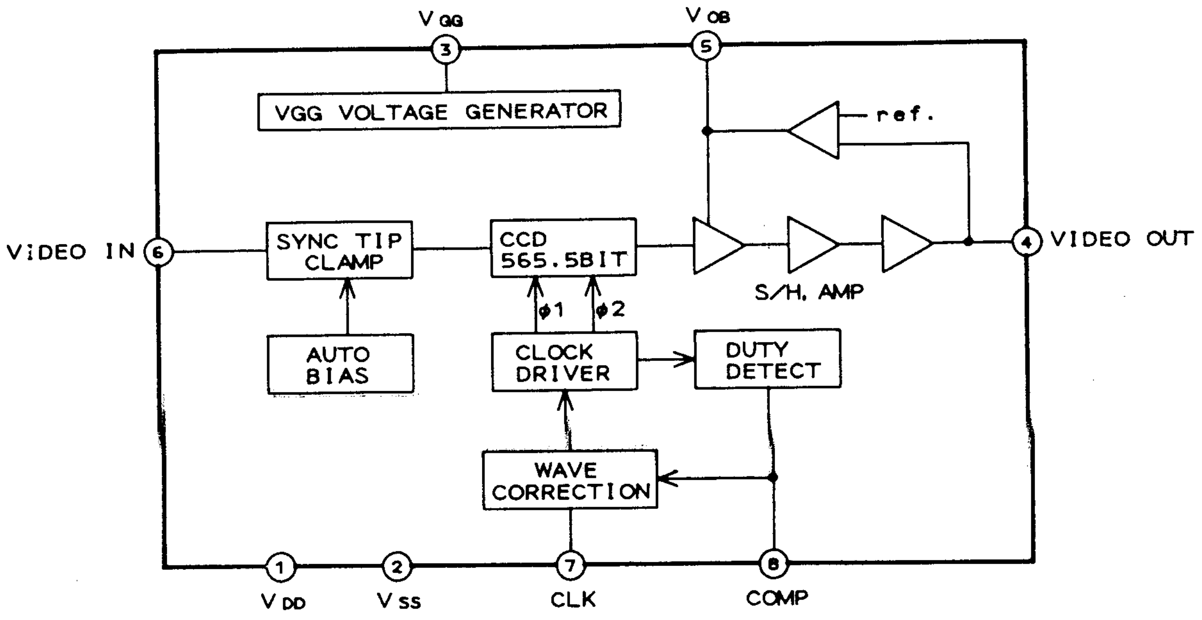
CXA1645M (RGB ENCODER)

PIN No.	PORT NAME	I/O	FUNCTION
1	GND1	–	Ground (except RGB output, composite video output, Y/C output circuit).
2	R IN	I	Analog RGB signal input pin.
3	G IN	I	
4	B IN	I	
5	N.C	–	
6	SC IN	I	Sub carrier input pin.
7	NP IN	I	NTSC, PAL mode select pin. (H : NTSC, L : PAL)
8	BF OUT	O	Burst flag output for monitoring.
9	YCLPC	–	Time constant setting pin for Y signal clamp.
10	SYNC IN	I	Composite sync signal input pin.
11	N.C		
12	VCC1	–	+5 V power supply (except RGB output, composite video output, Y/C output circuit).
13	IREF	–	Pin for fixing internal reference current.
14	**VREF**	–	**Pin for internal reference voltage.**
15	C OUT	O	Chroma signal output pin.
16	Y OUT	O	Y signal output pin.
17	YTRAP	–	Pin for reducing cross colour by the sub carrier frequency component included in Y signal
18	FO	–	Internal filter fo adjustment pin.
19	VCC2	–	+5 V power supply (for RGB output, composite video output, Y/C output circuit).
20	CVOUT	O	Composite video signal output.
21	B OUT	O	Analog RGB signal output pin.
22	G OUT	O	
23	R OUT	O	
24	GND2	–	Ground (for RGB output,composite video output, Y/C output circuit).

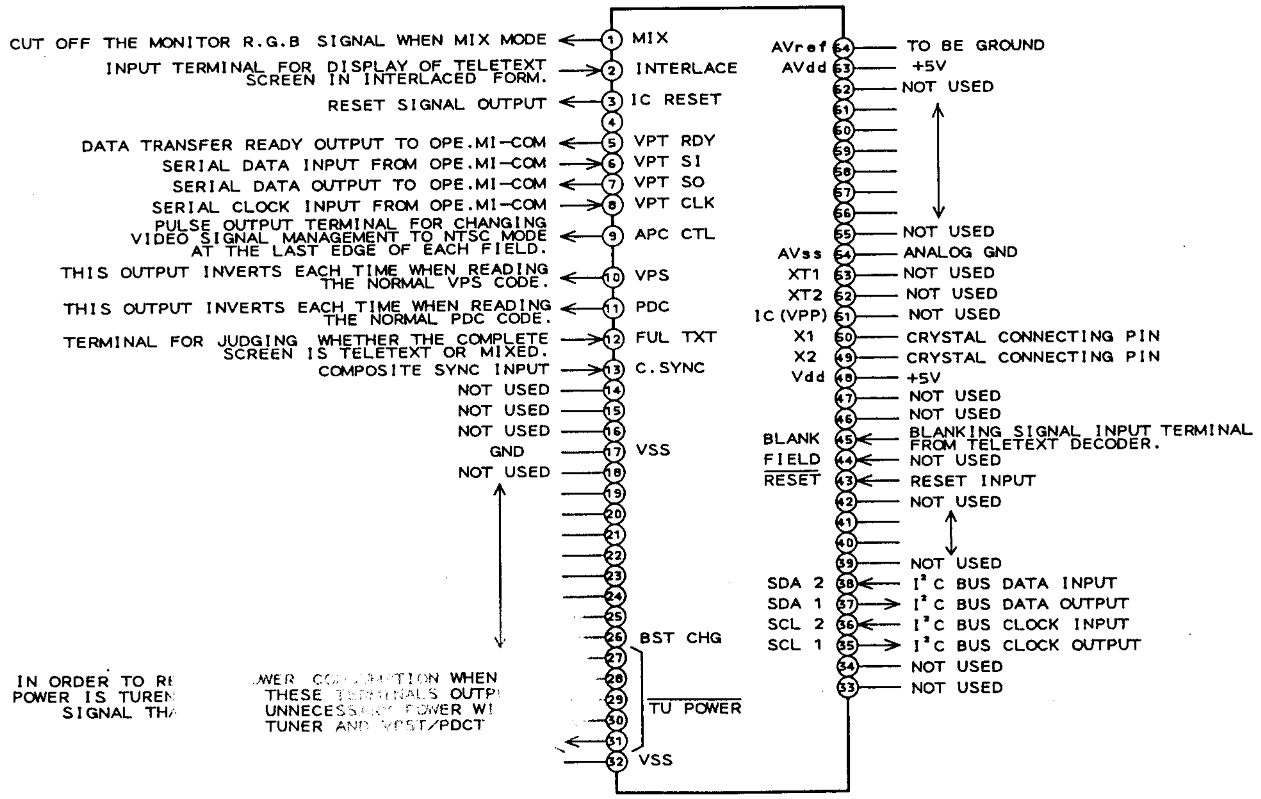
LC74760 (CHARACTER GENERATOR)

PIN No	PORT NAME	I/O	FUNCTION
1	Vss	—	Connect the GND
2	XTAL in1	I	14.318 MHz crystal oscillator input
3	XTAL out1	O	14.318 MHz crystal oscillator output
4	H SYNC	O	AFC H sync output
5	XTAL in2	I	17.744 MHz crystal oscillator input
6	XTAL out2	O	17.744 MHz crystal oscillator output
7	V SYNC	O	V. SYNC output
8	$\overline{\text{CS}}$	I	Enable input pin of serial data input
9	SIN	I	Serial data input
10	SCLK	I	Clock input pin for serial data input
11	$\overline{\text{SECAM}}$	I	SECAM mode select pin (H : SECAM MODE)
12	$\overline{525}$/625	I	Select pin, 525 or 625 of scanning line
13	$\overline{\text{NTSC}}$/PAL	I	NTSC/PAL SELECT PIN (L : NTSC)
14	$\overline{3.58}$/4.43	I	3.58MHz or 4.43MHz select input
15	$\overline{\text{RST}}$	I	System reset input
16	CVOUT	O	Composite video signal output
17	VDD2	—	Power supply (+5 V)
18	CVIN	I	Composite video signal input
19	CVCR	I	Chroma signal input for SECAM mode
20	SYNC IN	I	Video signal input of internal sync separator circuit
21	SEPC	—	Adjustment pin of internal sync separator circuit
22	Vss	—	Connect the GND
23	PD OUT	O	AFC control voltage output
24	AM PIN	I	Filter connect pin for AFC circuit
25	AM POUT	O	Filter connect pin for AFC circuit
26	FC	I	AFC control voltage input
27, 28	VCO IN (out)	I/O	Coil and capacitor connecting pin of LC oscillator for VCO.
29	SYNC DET	O	Exclusive NOR logic output of H SYNC AND C SYNC
30	VDD1	—	Digital power supply (+5 V)

LC8992 (CCD 1H DELAY LINE)


V GG
V OB
③
⑤
VGG VOLTAGE GENERATOR
ref.
VIDEO IN ⑥
SYNC TIP CLAMP
CCD 565.5BIT
④ VIDEO OUT
S/H, AMP
φ1
φ2
AUTO BIAS
CLOCK DRIVER
DUTY DETECT
WAVE CORRECTION
①
②
⑦
⑧
V DD
V SS
CLK
COMP

μPD78014CW (VPT/PDC MI-COM)


CUT OFF THE MONITOR R.G.B SIGNAL WHEN MIX MODE ① MIX
INPUT TERMINAL FOR DISPLAY OF TELETEXT SCREEN IN INTERLACED FORM. ② INTERLACE
RESET SIGNAL OUTPUT ③ IC RESET
④
DATA TRANSFER READY OUTPUT TO OPE.MI-COM ⑤ VPT RDY
SERIAL DATA INPUT FROM OPE.MI-COM ⑥ VPT SI
SERIAL DATA OUTPUT TO OPE.MI-COM ⑦ VPT SO
SERIAL CLOCK INPUT FROM OPE.MI-COM ⑧ VPT CLK
PULSE OUTPUT TERMINAL FOR CHANGING VIDEO SIGNAL MANAGEMENT TO NTSC MODE AT THE LAST EDGE OF EACH FIELD. ⑨ APC CTL
THIS OUTPUT INVERTS EACH TIME WHEN READING THE NORMAL VPS CODE. ⑩ VPS
THIS OUTPUT INVERTS EACH TIME WHEN READING THE NORMAL PDC CODE. ⑪ PDC
TERMINAL FOR JUDGING WHETHER THE COMPLETE SCREEN IS TELETEXT OR MIXED. ⑫ FUL TXT
COMPOSITE SYNC INPUT ⑬ C.SYNC
NOT USED ⑭
NOT USED ⑮
NOT USED ⑯
GND ⑰ VSS
NOT USED ⑱
⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕
㉖ BST CHG
㉗ ㉘ ㉙ ㉚ ㉛ $\overline{\text{TU POWER}}$
㉜ VSS
IN ORDER TO RE [illegible] WER CO [illegible] TION WHEN
POWER IS TUREN [illegible] THESE [illegible] OUTP
SIGNAL THA [illegible] UNNECESS [illegible] POWER WI
TUNER AND [illegible] /PDCT
AVref (64) TO BE GROUND
AVdd (63) +5V
(62) NOT USED
(61) (60) (59) (58) (57) (56)
(55) NOT USED
AVss (54) ANALOG GND
XT1 (53) NOT USED
XT2 (52) NOT USED
IC (VPP) (51) NOT USED
X1 ㊿ CRYSTAL CONNECTING PIN
X2 ㊾ CRYSTAL CONNECTING PIN
Vdd ㊽ +5V
㊼ NOT USED
㊻ NOT USED
BLANK ㊺ BLANKING SIGNAL INPUT TERMINAL FROM TELETEXT DECODER.
FIELD ㊹ NOT USED
$\overline{\text{RESET}}$ ㊸ RESET INPUT
㊷ NOT USED
㊶ ㊵
㊴ NOT USED
SDA 2 ㊳ I²C BUS DATA INPUT
SDA 1 ㊲ I²C BUS DATA OUTPUT
SCL 2 ㊱ I²C BUS CLOCK INPUT
SCL 1 ㉟ I²C BUS CLOCK OUTPUT
㉞ NOT USED
㉝ NOT USED

M37770M4H-163/165FP (SERVO/SYSCON MI-COM FOR PAL Hi-Fi MODEL)

PIN No.	PORT NAME	I/O	FUNCTION
1,35,84	VCC	–	+5 V power supply.
2	FLY.ES	O	Flying erase OSC control output.
3	Vss	–	To be ground
4	TRP	I	Take up reel pulse input
5	SRP	I	Supply reel pulse input.
6	SEC.MES	O	SECAM & MESECAM select output. (PAL : L)
7,60	NTSC	O	NTSC mode select output. (NTSC : L)
8	C.SYNC	I	Cmposite sync input. (for video judge)
9	SP	O	Tape speed judge output. (except SP : H)
10,50 74,103	VSS	–	Ground.
11	EE	O	EE line control pin.
12	VP	O	Quasi V pulse signal output.
13	INSERT	O	Mute control output for recording section (mute : H)
14	REC.S	O	REC start control output. (real time output)
15	V.SWP	O	Video head switching pulse.
16	PICT	O	Picture quality control output.
17	A.SWP	O	Hi-Fi head switching pulse output
18	A.OSC	O	Linear audio bias OSC on/off control.
20	A.REC.H	O	REC/PB select control output for Hi-Fi audio section. (L : Hi-Fi REC)
21	A.REC/MUTE	O	Rec mute control output for Hi-Fi audio section. (L : mute)
22	Hi-Fi DET	I	Hi-Fi/normal detect input. (Hi-Fi : L)
24	SAT	O	Satellite select control output. (satellite : L)
25	DEC CTL	O	Decoder on/off switching output.
26	WS.J	I	Wide/normal screen judge input.
27	F.E	O	Full track erase OSC control output.
28	WS/NOR	O	Wide screen/normal screen select output. (wide : H)
29	REC SAF	I	REC safety sw input. (L : REC enable)
30	S.PACK	I	S-VHS tape detect switch input. (H : S-VHS tape)
31~ 34	RSW1~ 4	I	Input from the rotary (mecha. position detect) switch.
36	SLOW PB	O	Head select switch control when trick mode. (L : normal PB, H : trick mode)
37	PB	O	PB mode control pin.
38	TRQUP	O	Loading motor torque control.
39	LM F	O	Loading motor direction control (forward).
40	LM R	O	Loading motor direction control (reverse).
41	Hi-Fi CS	O	Chip select output for Hi-Fi audio IC
42	Hi-Fi CLK	O	Clock output for Hi-Fi audio IC
43	Hi-Fi DATA	O	Data output for Hi-Fi audio IC
44	NUB	–	To be grounded.
45	NUA	–	To be grounded.
46	RESET	I	Reset input.
47	X IN	I	X'tal osc input (f=16 MHz).
48	X OUT	O	X'tal osc output (f=16 MHz).
49	CLK SEL	I	Clock select input. (L : requires sub clock)
51	XC IN	I	X'tal osc input (f=32.768 kHz).
52	XC OUT	O	X'tal osc output (f=32.768 kHz).
53	INT/EXT	O	Input select control output.
54	AV1/AV2	O	AV1/AV2 external input selection control output. (L : AV1)
55	TV/VCR	O	TV/VIDEO select control output. (L : TV, H : VIDEO)
56	I^2 C SDA	I/O	I^2 C bus serial data in/out.
57	I^2 C SCL	O	I^2 C bus serial clock in/out.
58	A.MUTE	O	Audio mute control. (H : mute)
59	T.MUTE	O	Tuner mute control. (H : mute)
61	FINE/NOR	O	Fine/normal tuning select control output
62	AFT-L	I	AFT low level judge input.
63	AFT-H	I	AFT high level judge input.
64	AFT	O	AFT on/off control output. (L : AFT on)
67	V.SYNC OUT	O	V sync negative output.
68	BAND B	O	Tuner band select output.

M37770M4H-163/165FP (SERVO/SYSCON MI-COM FOR PAL Hi-Fi MODEL)

PIN No.	PORT NAME	I/O	FUNCTION
69	BAND A	O	Tuner band select output.
70	HS	O	Capstan motor high speed control. (FF & RWD : L)
71	F/R	O	Capstan motor direction control. (H : reverse)
72	CTL GAIN	O	CTL signal level control output. (FF & RWD : "L")
73	CM STOP	O	Capstan motor stop control. (H : motor stop)
75	TU POWER	O	Tuner power supply on/off control. (H : on)
76	SEN POW	O	End & start sensor's power supply control.
77	AL	O	AL power supply line control output.
78	CTL RET	O	PB CTL reset control out
79	SYS SO	O	Serial data out to OPE MI-COM.
80	SYS SI	I	Serial data in from OPE MI-COM.
81	SYS CLK	I	Serial clock input from OPE MI-COM.
82	SYS RDY	O	Data transfer ready output to OPE MI-COM.
83	SHORT	I	Power supply abnormal condition detect input. (L : REG voltage is too high.)
85	AMP VCC	–	+5 V power supply for analog AMP.
86	AMP VREF	–	Voltage reference for analog AMP.
87	CLAMPR	I	CTL clamp AMP negative input.
88	CLAMPF	I	CTL clamp AMP positive input.
89	AMPC	–	Load capacitor connecting pin for CTL AMP.
90	CTLAMP OUT	O	CTL AMP output.
91	CTLAMP IN	I	CTL AMP input.
92	CTL+SWOUT	O	CTL internal sw control.
93	CTL+	I	CTL positive side input.
94	CTL-	I	CTL negative side input.
95	C	–	Capacitor connecting pin for REC CTL signal's trapezoid wave.
96	CP FG	I	Capstan motor FG signal input.
97	DM FG	I	Drum motor FG signal input.
98	DM PG	I	Drum motor PG signal input.
99	AMP VSS	–	Ground for analog system (FG, PG & CTL AMP).
100	A.VCC	–	+5 V power supply (for analogue system circuit).
102	VREF	–	Servo voltage reference.
104	FINE VT	O	Fine tuning voltage output. (D/A out)
105	V.REC,VOL 2	O	CH-2 video head REC current control output. (D/A)
106	V.REC,VOL 1	O	CH-1 video head REC current control output. (D/A)
107	ANC.VOL	O	Noise cancel value output. (D/A)
108	Hi-Fi ENV	I	Hi-Fi envelope detect signal input for auto tracking
109	LNC	O	Line noise canceller control (L/M/H).
111	E/P/T	O	EE/PB/TRICK mode select control (L/M/H).
112	ES	I	End sensor input.
113	INSERT H	O	CTL head control when insert mode.
115	SDP	I	SECAM (MESECAM) detect signal input. (PAL : L)
116	SS	I	Start sensor input.
117	CT DET	I	Cross talk detection voltage input for auto tracking.
118	TUNE	O	Tuning output for I-HQ system (L,M & H).
119	ENV.DET	I	Video envelope detect input.
120	V.SYNC IN	I	V.SYNC input.
121	HEAD CTL	O	Video head select control output when trick mode.
122	NP	O	Color system convert control out (NTSC to PAL : L)
123	C.FG MON	O	Amplified CM FG signal out for monitoring.
124	D.FG MON	O	Amplified CM FG signal out for monitoring.
125	CTL MON	–	Amplified CTL signal out for monitoring.
126	TUNER PWM	O	Tuning voltage output for tuner.
127	CM PWM	O	Speed & phase error output for capstan motor.
128	DM PWM	O	Speed & phase error output for capstan motor.

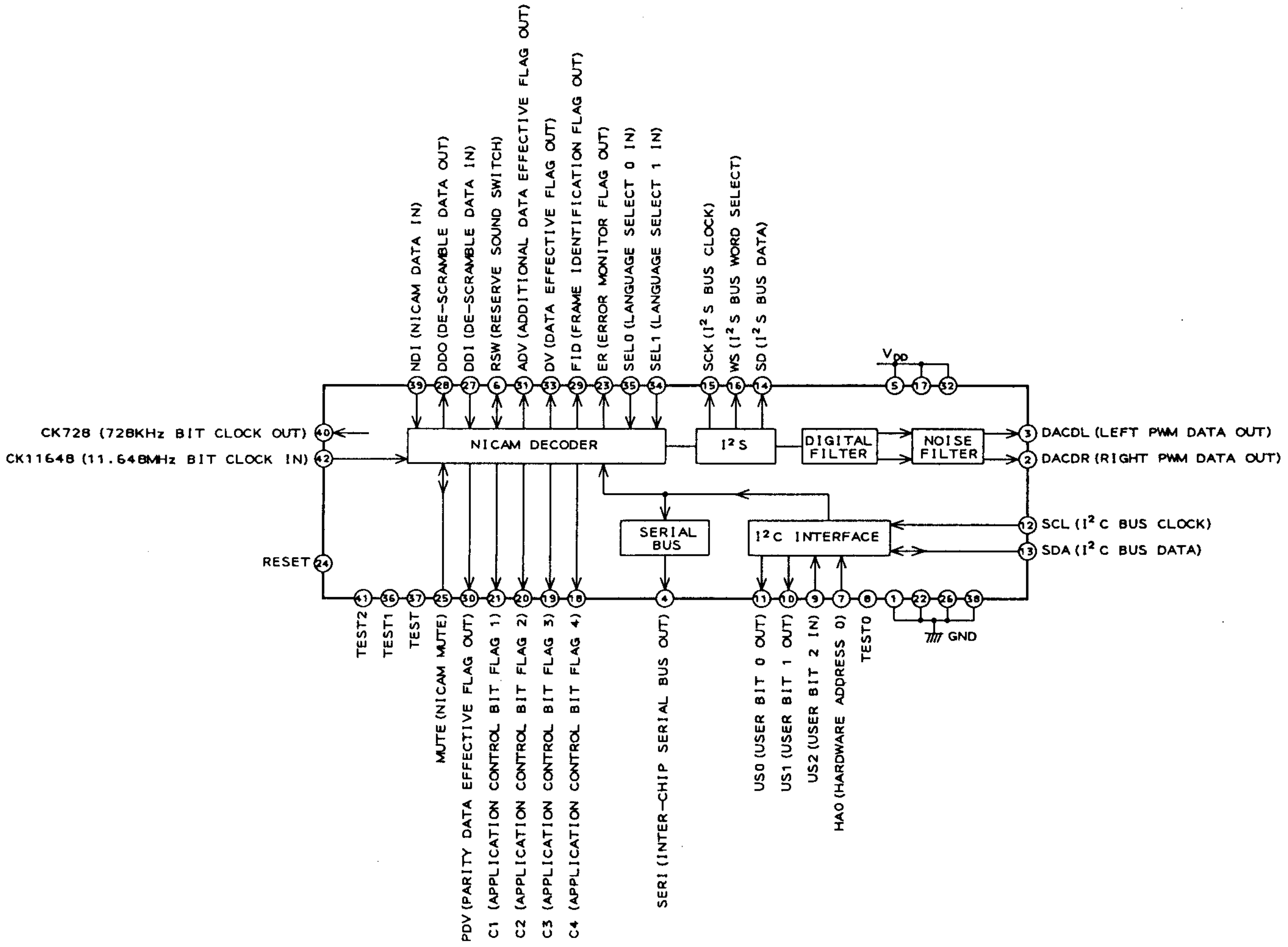
M38173M8 (OPERATION MI-COM)

PIN NO	PORT NAME	I/O	FUNCTION
1	LEVEL L	I	Audio level meter input (L-ch).
2	LEVEL R	I	Audio level meter input (R-ch).
5	VPS RDY	I	VPT MI-COM transfer ready signal input
6	VPS CLK	O	VPT MI-COM serial clock output
7	VPS SI	I	Serial data from VPT MI-COM.
8	SYS RDY	I	Syscon transfer ready signal input.
9	SYS CLK	O	Serial clock output to SYSCON MI-COM.
10	OSD CLK	O	Serial clock output to OSD IC (LC74760).
11	OPE SO	O	Serial data out to syscon, VPS and IMS IC.
12	OPE S	I	Serial data in from syscon MI-COM.
13	OSD CE	O	Enable output for OSD IC (LC74760).
14	ASSIST POW	O	Door motor speed control output. (L : 4 V, H : 8 V)
15	FLD OPEN H	O	Door motor drive output. (H & H : stop, H & L : open, L & H : close)
16	FLD OPEN L	O	
17	D/A PWM	O	FLD filament power supply on/off control. (off : H, on : 62.5 kHz square wave)
20	T1 OUT	O	1/2 counted downed square waveform signal output of timer 1.
21	FL SW 1	I	Cassette door close detect switch input. (H : open, L : close)
22,23	FL SW2,3	I	Cassette door's gear position detect switch input.
24	FL SW 4	I	Cassette tape detect switch input. (H : inserted, L : empty)
25	RESET OUT	O	Reset signal output to SYSCON & VPT MI-COM.
26	REMOCON	I	Remote control signal input.
27	RESET IN	I	Reset signal input.
28	XC IN	I	Sub clock (32.768 kHz) input/output.
29	XC OUT	O	
30	XC IN	I	Main clock (6.0 MHz) input/output.
31	XC OUT	O	
32	VSS	–	Ground
33	EDIT	I	Edit switch input. (L : on)
34	AUDIO SEL	I	Audio mode select input. (H : Hi-Fi, L : mix)
35~ 38	SHUTTLE1~ 4	I	Shuttle pulse input.
39,40	JOG1,2	I	Jog pulse input.
41~ 54	T0~ 13	O	FLD digit data output.
57~ 69	S0~ 12	O	FLD segment data output.
70	MIC IN	I	MIC switch input. (H : MIC in)
72	P.DOWN	I	Power down detect input.
73	VCC	–	+5 V power supply.
74	VEE	–	–30 V power supply for pulled down.
75	AVSS	–	Ground for A/D converter.
76	VREF	I	A/D converter reference voltage input. (+5 V)
77~ 80	KEY1~ 4	I	Key input. (A/D input)

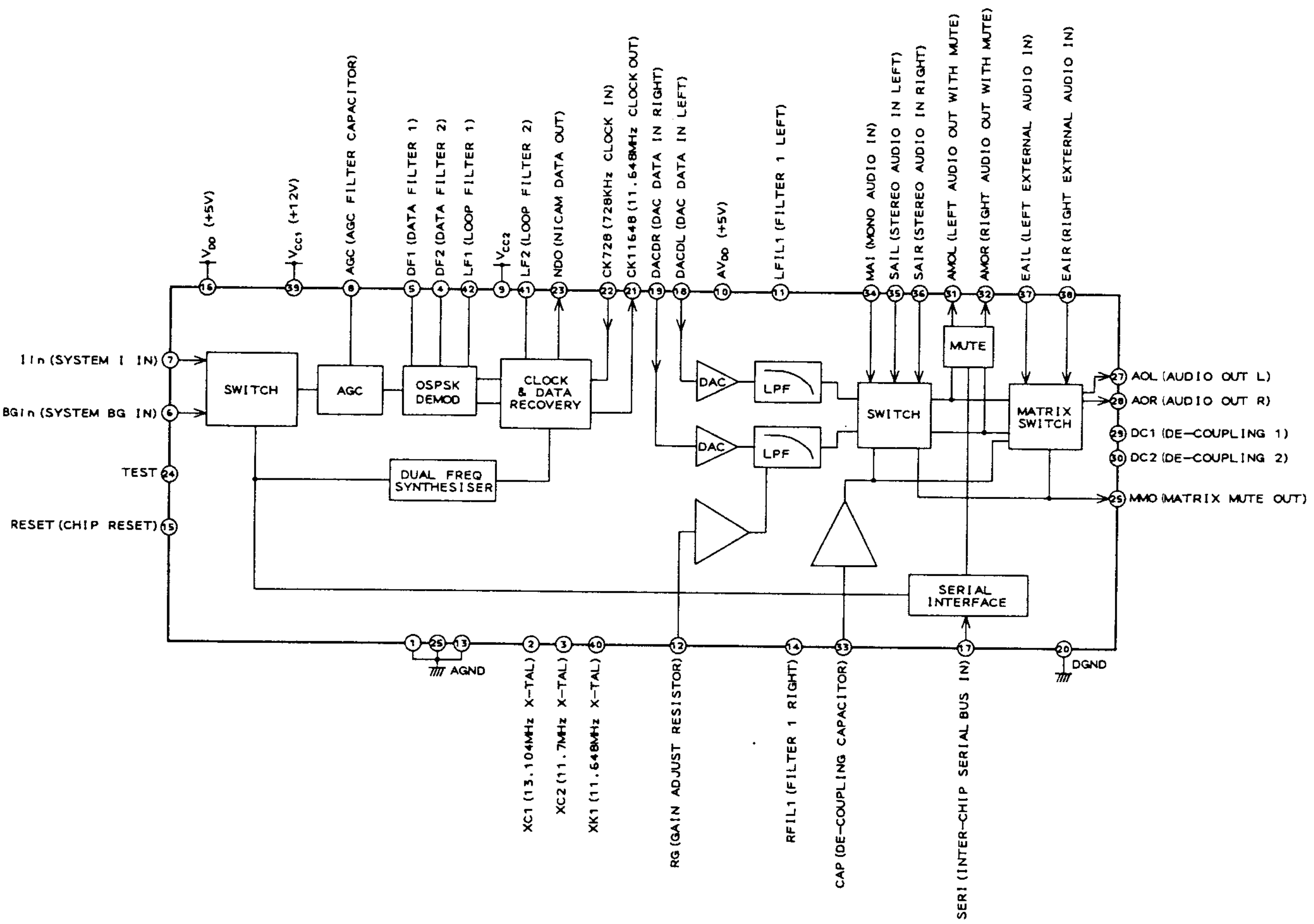
SAA5233 (VPS DATA DECODER)

PIN No.	PORT NAME	I/O	FUNCTION
1	MOD IN	I	REC FM modulator input pin.
2	BLACK	–	Video black level storage pin connected to ground via a 0.1 μF capacitor.
3	IREF	I	Reference current input pin.
4	VDD	–	+5 V power supply.
5	Vss	–	Ground.
6	OSCOUT	O	27 MHz crystal oscillator output.
7	OSCIN	I	27 MHz crystal oscillator input.
8	OSCGND	–	27 MHz crystal oscillator ground.
9	TEST S	–	Ground in normal operation.
10	TEST A	–	Ground in normal operation.
11	TP1	–	Ground in normal operation.
12	SCL	I	Serial clock input for I² C control bus.
13	SDA	I/O	Serial data port for I² C control bus.
14	AO	–	Least significant bit of I² C address.
15	INT	O	Open drain interrupt output. (Active low)
16	TP2	–	Ground in normal operation.

TDA8204 (NICAM DECODER)

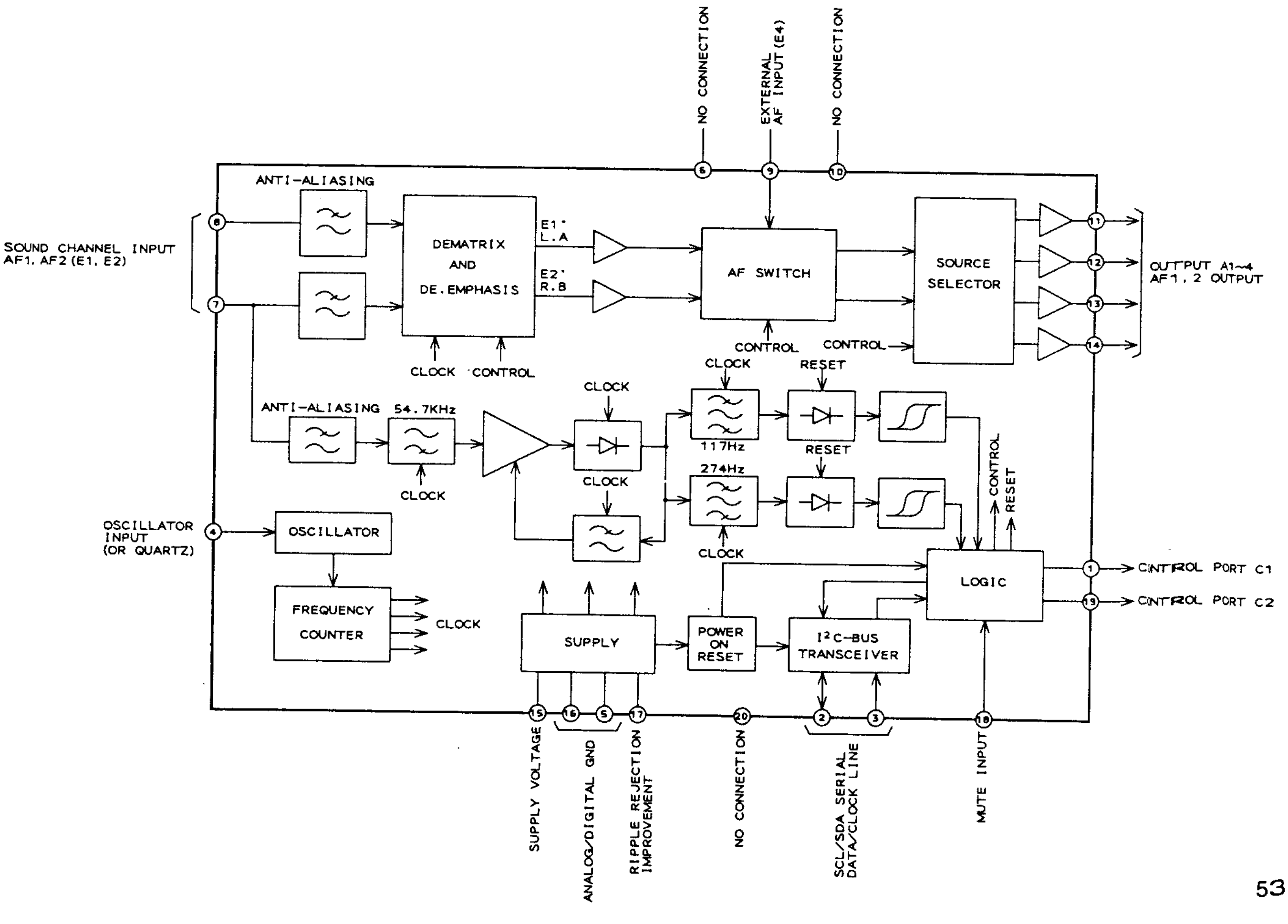

NDI (NICAM DATA IN) 39
DDO (DE-SCRAMBLE DATA OUT) 28
DDI (DE-SCRAMBLE DATA IN) 27
RSW (RESERVE SOUND SWITCH) 6
ADV (ADDITIONAL DATA EFFECTIVE FLAG OUT) 31
DV (DATA EFFECTIVE FLAG OUT) 33
FID (FRAME IDENTIFICATION FLAG OUT) 29
ER (ERROR MONITOR FLAG OUT) 23
SEL0 (LANGUAGE SELECT 0 IN) 35
SEL1 (LANGUAGE SELECT 1 IN) 34
SCK (I^2S BUS CLOCK) 15
WS (I^2S BUS WORD SELECT) 16
SD (I^2S BUS DATA) 14
V_{DD} 5 17 32
CK728 (728KHz BIT CLOCK OUT) 40
CK11648 (11.648MHz BIT CLOCK IN) 42
NICAM DECODER
I^2S
DIGITAL FILTER
NOISE FILTER
3 DACDL (LEFT PWM DATA OUT)
2 DACDR (RIGHT PWM DATA OUT)
SERIAL BUS
I^2C INTERFACE
12 SCL (I^2C BUS CLOCK)
13 SDA (I^2C BUS DATA)
RESET 24
41 TEST2
36 TEST1
37 TEST
25 MUTE (NICAM MUTE)
30 PDV (PARITY DATA EFFECTIVE FLAG OUT)
21 C1 (APPLICATION CONTROL BIT FLAG 1)
20 C2 (APPLICATION CONTROL BIT FLAG 2)
19 C3 (APPLICATION CONTROL BIT FLAG 3)
18 C4 (APPLICATION CONTROL BIT FLAG 4)
4 SERI (INTER-CHIP SERIAL BUS OUT)
11 US0 (USER BIT 0 OUT)
10 US1 (USER BIT 1 OUT)
9 US2 (USER BIT 2 IN)
7 HAO (HARDWARE ADDRESS 0)
8 TEST0
1 22 26 38
GND

TDA8205 (QPSK DEMODULATOR)



16 V_DD (+5V)
39 V_CC1 (+12V)
8 AGC (AGC FILTER CAPACITOR)
5 DF1 (DATA FILTER 1)
4 DF2 (DATA FILTER 2)
42 LF1 (LOOP FILTER 1)
9 V_CC2
41 LF2 (LOOP FILTER 2)
23 NDO (NICAM DATA OUT)
22 CK728 (728KHz CLOCK IN)
21 CK11648 (11.648MHz CLOCK OUT)
19 DACDR (DAC DATA IN RIGHT)
18 DACDL (DAC DATA IN LEFT)
10 AV_DD (+5V)
11 LFIL1 (FILTER 1 LEFT)
34 MAI (MONO AUDIO IN)
35 SAIL (STEREO AUDIO IN LEFT)
36 SAIR (STEREO AUDIO IN RIGHT)
31 AMOL (LEFT AUDIO OUT WITH MUTE)
32 AMOR (RIGHT AUDIO OUT WITH MUTE)
37 EAIL (LEFT EXTERNAL AUDIO IN)
38 EAIR (RIGHT EXTERNAL AUDIO IN)
IIn (SYSTEM I IN) 7
BGIn (SYSTEM BG IN) 6
TEST 24
RESET (CHIP RESET) 15
SWITCH
AGC
OSPSK DEMOD
CLOCK & DATA RECOVERY
DUAL FREQ SYNTHESISER
DAC
LPF
DAC
LPF
SWITCH
MUTE
MATRIX SWITCH
SERIAL INTERFACE
27 AOL (AUDIO OUT L)
28 AOR (AUDIO OUT R)
29 DC1 (DE-COUPLING 1)
30 DC2 (DE-COUPLING 2)
25 MMO (MATRIX MUTE OUT)
1 25 13 AGND
2 XC1 (13.104MHz X-TAL)
3 XC2 (11.7MHz X-TAL)
40 XK1 (11.648MHz X-TAL)
12 RG (GAIN ADJUST RESISTOR)
14 RFIL1 (FILTER 1 RIGHT)
33 CAP (DE-COUPLING CAPACITOR)
17 SERI (INTER-CHIP SERIAL BUS IN)
20 DGND

TDA8417 (MULTIPLXED DECODER)



6 NO CONNECTION
9 EXTERNAL AF INPUT (E4)
10 NO CONNECTION
ANTI-ALIASING
SOUND CHANNEL INPUT AF1, AF2 (E1, E2)
8
7
DEMATRIX AND DE.EMPHASIS
E1' L.A
E2' R.B
CLOCK
CONTROL
AF SWITCH
CONTROL
CONTROL
SOURCE SELECTOR
11
12
13
14
OUTPUT A1~4 AF1, 2 OUTPUT
ANTI-ALIASING
54.7KHz
CLOCK
CLOCK
CLOCK
RESET
117Hz
RESET
274Hz
CLOCK
CLOCK
CONTROL
RESET
OSCILLATOR INPUT (OR QUARTZ) 4
OSCILLATOR
FREQUENCY COUNTER
CLOCK
SUPPLY
POWER ON RESET
I²C-BUS TRANSCEIVER
LOGIC
1 CONTROL PORT C1
19 CONTROL PORT C2
15 SUPPLY VOLTAGE
16 5 ANALOG/DIGITAL GND
17 RIPPLE REJECTION IMPROVEMENT
20 NO CONNECTION
2 3 SCL/SDA SERIAL DATA/CLOCK LINE
18 MUTE INPUT